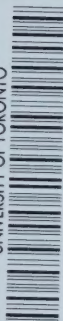


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Journal

OF THE CANADIAN DENTAL ASSOCIATION

Dental Epidemiology in Malaya

PART III — A Pilot Study to Estimate the Fluoride Content of the Enamel of the Teeth of Some Chinese, Malaya and Indian Residents in Singapore *

F. McCOMBIE**, I.D.S., R.C.S., D.D.P.H.

At the commencement of this study, previous clinical experience¹ had suggested that a marked difference existed between dental caries prevalence rates for the three major racial groups resident in Singapore and Malaya, namely Chinese, Malaysians and those of Indian and Pakistani origin.

These differences have since been confirmed by the epidemiological study of 449 Singapore National Servicemen and previously reported.² By this study it was shown that for males of 21 years of age, the D.M.F. rates were for the Chinese 13.30, for the Malaysians 8.41 and the

Indian and Pakistani group 8.85. The difference between the higher D.M.F. rate for the Chinese and the rates for the other two racial groups was statistically very significant, but the difference between the latter two groups was of no significance.

The fluoride content of the water supply of Singapore Island was reported³ in 1952 as less than 0.2 p.p.m. In view of the likely greater water consumption due to the high temperature prevailing, fluoridation at 0.7 p.p.m. was recommended. One of the four feeders necessary to fluoride the Singapore water supply commenced operation in May 1956. Due to the high humidity some mechanical difficulties were at first experienced. These difficulties having been overcome, two

* Carried out as part of an assignment with the University of Malaya sponsored jointly with the Government of Canada under the terms of the Colombo Plan Programme for South and South-East Asia.

** Director, Preventive Dentistry, Health Branch, Government of British Columbia.

further feeders were brought into operation during the first six months of the following year and it is planned that the fourth and last feeder will be in operation before the close of 1957.

In Malaya it is understood that, until the last three years, all water supplies were derived either from surface waters or shallow wells. Recently, in one area only, three artesian wells have been brought into use. Regrettably, since no fluoride analysis of any of the water supplies in Malaya has as yet been carried out, no confirmation as to their anticipated low fluoride content is yet available.

PREVIOUS STUDIES

However, low caries incidence may on occasion be associated with a high fluoride intake from the diet as distinct from the water supply as demonstrated amongst the residents of Tristan da Cunha⁴ where the fluoride content of the water supply is low, i.e. 0.2 p.p.m. Moreover, analysis of the fluoride content of the enamel and dentine of these teeth⁵ revealed a fluoride content which was suggested as being comparable to that usually found in North America of teeth of residents of an area with a water fluoride content of approximately 1 p.p.m. The average fluoride content of the enamel of six permanent teeth was reported as 140 p.p.m. It was suggested that the relatively high fluoride content of the teeth was due to the abnormally high intake of fish in the dietary regime of the residents of Tristan da Cunha.

Studies have also recently been reported⁶ comparing the fluoride content of enamel and dentine of teeth of residents of Boston, Mass., with those of Delhi and Bombay. Low fluoride contents of the water supplies of all these communities were reported as 0.12, 0.25 and 0.04 p.p.m. respectively. The average fluoride contents of the enamel of the Boston teeth (2 groups) were reported as 40 and 58 p.p.m., (range 25-180 p.p.m.) whereas the average fluoride contents of the enamel of the Delhi and Bombay teeth were respectively 299 p.p.m. (range 156-576

p.p.m.) and 184 p.p.m. (range 83-367 p.p.m.). The authors report a comparatively low incidence of dental caries amongst the children of Delhi and Bombay as compared with the children of Massachusetts. They postulate that the likely increased water consumption only partially explains the likely increased fluoride intake and the higher fluoride content of the teeth of the residents of Delhi and Bombay. They suggested that increased ingestion of fluoride likely occurred from local foods although no information in this regard was available except that the high fluoride content of local sea salt at 40 p.p.m. was noted. Another study⁷ reported the high fluoride of well salt used in China, in which 14 samples of such salt contained from 34.80 p.p.m. to 115.10 p.p.m. of fluoride. The authors of the Indian study stated that absorption of fluoride had previously been suggested as being influenced by calcium and Vitamin C intake, and they also considered the possibility of a higher rate of absorption and utilisation of the fluoride intake by the residents of Delhi and Bombay.

Brudevold, Gardner and Smith⁸ (1956) by the analysis of the enamel of some 560 teeth have indicated that the fluoride content of enamel likely increases with age in both high and low fluoride areas. These authors also draw attention to the mass of evidence now accumulated which demonstrates that fluoride is taken up by the external enamel.

However, previously McClure and Likins⁹ (1951) demonstrated that for the teeth of persons continuously resident in Aurora, Ill., with a water supply having 1.1-1.2 p.p.m. fluoride, there were no significant differences between the mean fluoride contents of the enamel of teeth of various age groups. In this study the mean fluoride content of the enamel of 36 teeth of 31 subjects aged 8-25 years was 135 p.p.m., of 35 teeth of 12 subjects aged 25-45 years was 152 p.p.m., and of 30 teeth of 17 subjects aged over 40 years it was 140 p.p.m.

Earlier McClure¹⁰ (1948) had shown in

a study of 610 teeth that no significant differences existed between the fluoride contents of the enamel of sound and carious teeth. He also demonstrated that there was no significant variation of fluoride content of enamel between different anatomic types of teeth.

PURPOSE OF STUDY

Firstly it was considered desirable to endeavour to establish whether or not comparisons between the mean estimated fluoride content of the enamel of teeth of different groups of subjects should be age specific, i.e., whether or not such comparisons are valid only if teeth from similar age groups are compared.

To achieve this it was planned, within one racial group, of whom all the subjects would have been born either in Malaya or Singapore and be now resident in Singapore, to compare the mean estimated fluoride content of the teeth of the subjects of a younger age group with that of an older age group.

Secondly it was planned to compare the mean estimated fluoride content of the enamel of the teeth of the three major racial groups resident in Singapore and who had been born either in Singapore or Malaya.

If the first study demonstrated a significant difference between the mean estimated fluoride contents of the enamel of teeth of the two age groups, then it was planned that for the second study comparisons would be confined to those between teeth of subjects of similar age groups.

METHODS

Specimen teeth were collected at the Department of Oral Surgery, of the Dental Clinic, General Hospital, Singapore, on twenty days. All teeth of patients aged 15 years or over and of which one half or more of the crown appeared intact were collected; but only one specimen was taken from each patient. Within these terms, all available teeth were included. A dental officer especially

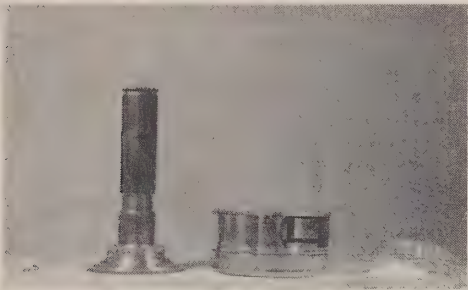
detached for this duty recorded for each tooth its description and the reason for extraction, and regarding the patient, the race, age at last birthday, sex and whether "locally born" or "immigrant". For the last item, "locally born" was considered to be in Singapore or the Federation of Malaya. Information regarding the subject was taken from the patient's identity card which all residents of Singapore are required to carry at all times.

For the purposes of the current study only the teeth of "locally born" residents of Singapore have been analysed.

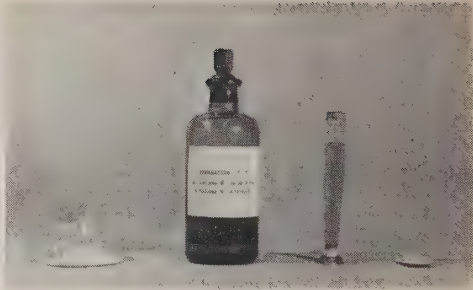
Of the specimen teeth, crowns and roots were separated by fretsaw and the roots were discarded. The crowns were pulverised by means of a high grade steel pestle and mortar until the tooth powder passed through a sieve of 100 gauge (U.S.). Crowns were weighed before and after pulverisation and loss in weight averaged 4.6%. Enamel & dentine were separated by the method described by Manly and Hodge.¹¹ By this method a liquid comprising 91% bromoform and 9% acetone is used and in which the enamel powder sinks and the dentine powder remains suspended within an inner tube after centrifuging. Manly and Hodge demonstrated in their trials that this method provided enamel powder of average purity of 98.7%.

Extraction of the fluoride from the enamel was carried out by a method slightly modified from that originally described by Singer and Armstrong.¹² Basically this method is that within a closed polyethylene container, the fluoride is released from the enamel by the action of concentrated perchloric acid, in the form of hydrogen fluoride, which is collected on a roughened polyethylene strip treated with sodium hydroxide.

Since 1954, when this method was originally described there have become commercially available 2 oz. polyethylene bottles with a tight fitting polyethylene stopper and a hard plastic screw cap. Such bottles were tested under consider-



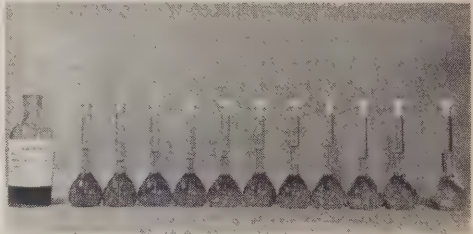
1. Preparation of Tooth Powder.



2. Separation of Enamel Powder.



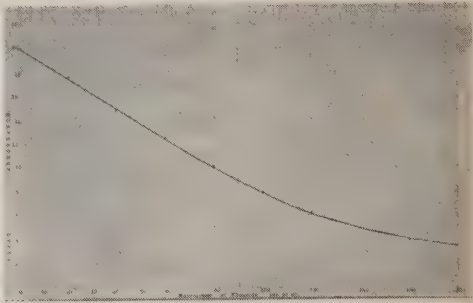
3. Extraction of Fluoride from Enamel powder.



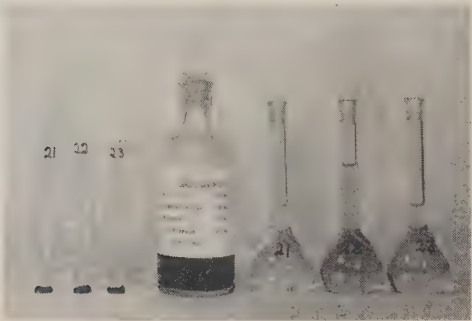
4. Fluoride Standards.



5. Portable Colorimeter.



6. Standardization Curve.



7. Assays of Fluoride recovered from Enamel Powder.

able pressure and found to be air tight. Before each test all bottles were closed and subjected to pressure under water. A few which demonstrated leakage were discarded. In addition 70% percholic acid was not available. Therefore 60% acid was distilled and the distillate at 198°C was collected and utilised. Under these circumstances preliminary trials with known amounts of fluoride showed maximum recovery of fluoride after 65 hours incubation at 50°C.

To demonstrate recovery rates within the anticipated range of fluoride recovery, 27 known samples of sodium fluoride ranging from 20 to 800 micrograms of fluoride were analysed. An average recovery rate of 99.1% was achieved.

The fluoride recovered when in solution with re-distilled water was neutralised with 0.02 N perchloric acid using p-nitrophenol as the indicator.

Estimation of the fluoride was carried out by the colorimetric method described by Icken and Blank¹⁸ using an E.E.L. Evans portable colorimeter. This method is based on the bleaching of the thorium-alizarin lake by fluoride ions. The color reagent which provides this lake, was freshly prepared for each series of assays. Standards at 20 microgram intervals for the range zero to 180 micrograms and of 500 micrograms of fluoride were prepared for each series of assays and to all standards the color reagent was added. The differences between the light absorbance of these standards and that of the 500 microgram standard (in which maximum bleaching occurs) were read on the colorimeter and plotted against the known quantities of fluoride to provide standardisation curve for each series of assays. Differences between the light absorbance of the 500 microgram standard and of the solutions containing the fluoride recovered from the enamel samples were measured and the quantity of fluoride therein estimated from the standardisation curve.

By this method the minimum estimation was between five and ten micrograms of fluoride. Since the weight of

the enamel powder seldom exceeded 0.5 grams, this represented a minimum observation of less than 5 p.p.m. of fluoride within the enamel of the teeth assayed.

Of the total of 60 teeth analysed, those producing enamel powder of a weight of approximately 0.35 grams or greater were 33 specimens. These enamel powders were equally divided by weight and diffused as separate specimens. Aliquots of 1 c.c. of the dissolved distillate were then taken and to each 1 c.c. of the colour reagent added. Visual estimation of the resulting colour against prepared standards revealed the concentration to be within the ranges 0.10-0.30 and more micrograms of fluoride. In all cases, except one which was discarded, paired samples were within the same range. To provide greater accuracy of the estimation of the low fluoride being recovered, the paired samples were then pooled.

As an additional control, with each series of enamel powders being assayed were included three control blanks and three controls each containing 100 micrograms of fluoride in the form of sodium fluoride. Of 48 such controls, the blanks when assayed demonstrated an average of 0.13 microgram of fluoride, and from the 100 microgram controls an average of 93.1% fluoride was recovered and estimated.

RESULTS

By the above methods estimations were made of the fluoride concentrations in the enamel of 60 teeth, all of persons born in Malaya or Singapore and resident in Singapore at the time of extraction and from whom only one specimen tooth was taken. All teeth available within the groups under study were analysed.

Thirteen teeth were from Chinese subjects aged between 15 and 30 years. Details of these subjects, of the teeth and the estimated fluoride concentrations in the enamel of these teeth are presented in Table I. The mean age of this group was 20.7 years. The mean estimated fluoride concentration in the enamel of

TABLE I
FLUORIDE CONTENT OF ENAMEL OF TEETH OF SOME RESIDENTS OF SINGAPORE—CHINESE,
AGED BETWEEN 15 AND 30 YEARS, BORN IN SINGAPORE OR MALAYA

Age of subject, in years	Sex	Tooth	Reason for Extraction	Weight of enamel powder, in grams,	Fluoride recovered, in micrograms	Fluoride concentration, in enamel, in p.p.m.
16	F	1	Dentures	0.2154*	0.0	0.0
16	M	6	Caries	0.4122*	0.0	0.0
17	F	3	Periodontal ¹	0.2878*	3.0	10.4
17	F	8	Dentures	0.3476*	5.1	14.6
18	F	1	Caries	0.2720*	0.0	0.0
19	M	3	Orthodontics	0.2684*	6.5	24.1
21	M	4	Dentures	0.3552*	0.0	0.0
22	M	4	Trauma	0.5462*	1.0	1.8
22	F	5	Dentures	0.3700*	2.0	5.4
24	M	8	Periodontal	0.3200*	29.0	90.6
26	M	7	Periodontal	0.5202*	9.0	17.3
26	F	7	Caries	0.5962*	9.0	15.2
26	F	8	Dentures	0.5490*	45.0	81.9
Mean 20.7 years						Mean 20.1 p.p.m. Standard Error 8.1

Average loss of tooth powder during pulverising, by weight = 4.2%
* Enamel powder halved, two separate diffusions, colorimetric estimations compared and pooled

these teeth was 20.1 p.p.m., with a range from 0.0 p.p.m. to 90.6 p.p.m.

From Chinese subjects aged over 40 years the enamel of ten teeth was analysed. Results for this group are presented in Table II. The mean age of this group was 50.2 years. The mean estimated fluoride concentration in the enamel of these teeth was 147.8 p.p.m., with a range from 60.8 p.p.m. to 439.0 p.p.m.

Both the above groups comprised a total of 23 Chinese subjects all born in Malaya or Singapore and all resident in Singapore at the time of extraction of the single specimen tooth. The difference between the mean estimated fluoride concentration in the enamel of the teeth of the younger age group (20.1 p.p.m.) and that of the older age group (147.8 p.p.m.) is statistically highly significant.

From Malay subjects of between 15 and 30 years of age twenty-three teeth were available. Results of the analysis of the enamel of these teeth are presented in Table III. The mean age of this group was 22.6 years. The mean estimated fluoride concentration in the enamel of these teeth was 135.8 p.p.m., with a range from 0.0 p.p.m. to 574.4 p.p.m.

Indians and Pakistanis of between 15 and 30 years of age provided fourteen teeth for analysis. Results for this group are presented in Table IV. The mean age of these subjects was 22.6 years. The mean estimated fluoride concentration in the enamel of these teeth was 135.8 p.p.m., with a range from 4.5 p.p.m. to 347.5 p.p.m.

From the results presented it is possible to compare the mean estimated fluoride

TABLE II
FLUORIDE CONTENT OF ENAMEL OF TEETH OF SOME RESIDENTS OF SINGAPORE—CHINESE,
AGED OVER 40 YEARS, BORN IN SINGAPORE OR MALAYA

Age of subject, in years	Sex	Tooth	Reason for Extraction	Weight of enamel powder, in grams	Fluoride recovered, in micrograms	Fluoride concentration in enamel, in p.p.m.
42	M	1	Dentures	0.2300*	14.0	60.8
42	—	4	Periodontal	0.1418	14.0	98.7
45	M	5	Periodontal	0.2206*	19.0	86.0
45	F	4	Dentures	0.1982	18.5	93.3
51	M	7	Radiotherapy	0.5020*	31.0	61.7
51	F	3	Dentures	0.1506	14.0	93.0
53	M	8	Periodontal	0.4968*	34.0	68.4
55	F	3	Dentures	0.1242	35.0	281.1
57	F	4	Dentures	0.2676*	52.5	196.1
61	F	3	Dentures	0.1002	44.0	439.0
Mean 50.2 years						Mean 147.8 p.p.m. Standard Error 37.2

Average loss of tooth powder during pulverising, by weight = 3.7%

* Enamel powder halved, two separate diffusions, colorimetric estimations compared and pooled

concentrations in the enamel of teeth of some subjects all of the same age group (between 15 and 30 years of age), all born in Malaya or Singapore and resident in Singapore at the time of the extraction but of three distinct racial groups. The mean ages of the three racial groups were Chinese 20.7 years, Malaysians 22.6 years and the Indian and Pakistani group 22.6 years. The estimated fluoride concentration of the enamel of the teeth of the Chinese (20.1 p.p.m.) was statistically very significantly lower than that for the Malaysians (135.8 p.p.m.) and for the Indian and Pakistani group (135.8 p.p.m.).

DISCUSSION OF RESULTS

It is believed that all teeth analysed were from persons born and resident in low fluoride areas. Since the fluoridation of the Singapore water supply was commenced, only partially and at 0.7 p.p.m. of fluoride, less than twelve months prior

to the study, it was not considered that this would invalidate the findings.

The significant difference between the mean estimated fluoride content of the enamel of the teeth of the two specific age groups of Chinese is at variance with the earlier work of McClure⁶ for the teeth of residents of a high fluoride area. However, the findings of this study are in accord with the indications of Brudevold, Gardner and Smith⁸.

The caries experience (D.M.F. rates) of 21-year-old males born in Singapore or Malaya and resident in Singapore has been established² for the Chinese as 13.30, for the Malays 8.41 and for the Indians and Pakistanis 8.85. The mean estimated fluoride content of the enamel of the teeth of subjects of a similar mean age, have been demonstrated for the Chinese as 20.1 p.p.m., the Malays 135.8 p.p.m. and the Indian and Pakistani group 135.8 p.p.m. The D.F.M. rate and the mean estimated fluoride content of the enamel

TABLE III
FLUORIDE CONTENT OF ENAMEL OF TEETH OF SOME RESIDENTS OF SINGAPORE—MALAYSIANS,
AGED BETWEEN 15 AND 30 YEARS, BORN IN SINGAPORE OR MALAYA

Age of subject, in years	Sex	Tooth	Reason for Extraction	Weight of enamel powder, in grams	Fluoride recovered, in micrograms	Fluoride concentration in enamel in p.p.m.
17	F	6	Caries	0.4984*	22.0	44.1
17	F	7	Caries	0.4600*	43.0	93.4
18	F	6	Caries	0.2384	0.0	0.0
18	M	6	Caries	0.5112*	26.0	50.8
18	M	6	Caries	0.5064*	45.0	88.9
18	M	6	Caries	0.1450	35.0	241.3
19	M	4	Caries	0.1722	13.0	75.5
19	F	7	Caries	0.5100	51.0	100.0
20	F	6	Caries	0.3668	0.0	0.0
21	F	6	Caries	0.2428	0.0	0.0
22	F	6	Periodontal	0.5322*	79.0	143.5
24	F	2	Periodontal	0.0600	0.0	0.0
24	M	6	Caries	0.3318*	45.0	135.6
24	M	3	Periodontal	0.1888	108.0	574.0
25	M	7	Caries	0.5088*	25.0	49.2
25	M	6	Caries	0.5300*	117.0	220.7
26	F	7	Dentures	0.5500*	54.0	98.1
26	F	8	Caries	0.8242*	86.0	104.3
27	M	4	Periodontal	0.2463	11.0	44.7
27	M	5	Periodontal	0.2620	143.0	545.6
28	—	3	Cleft Palate	0.2138	20.0	93.5
29	M	8	Caries	0.6492*	51.0	78.9
29	F	5	Dentures	0.3364	123.0	336.0
Mean 22.6 years			Mean 135.8 p.p.m. Standard Error 32.0			

Average loss of tooth powder during pulverising, by weight = 5.1%
* Enamel powder halved, two separate diffusions, colorimetric estimation compared and pooled

of the Chinese are both very significantly different from the rates and means of the other two racial groups.
It would therefore appear likely that the high fluoride content of the teeth of the Malays, Indians and Pakistanis is a significant factor contributing to the lower caries prevalence amongst these groups as compared with the Chinese.
Since all subjects are presumed to be

born and resident in low fluoride areas, it is to be anticipated that the increased fluoride content of the enamel of the teeth of Malays, Indians and Pakistanis arises from their dietary regime.
Another possible factor was concerned. Sea salt is known to be high in fluoride content. If oral hygiene was practised by those groups using such salt, it was postulated that fluoride from this source

TABLE IV
FLUORIDE CONTENT OF ENAMEL OF TEETH OF SOME RESIDENTS OF SINGAPORE—INDIANS AND PAKISTANIS
AGED BETWEEN 15 AND 30 YEARS, BORN IN SINGAPORE OR MALAYA

Age of subject, in years	Sex	Tooth	Reason for Extraction	Weight of enamel powder, in grams	Fluoride recovered, in micrograms	Fluoride concentration in enamel, in p.p.m.
17	F	<u>6</u>	Caries	0.2592	11.0	42.5
19	F	<u>8</u>	Caries	0.1488	7.0	47.2
19	M	<u>7</u>	Caries	0.3032	19.0	62.7
19	M	<u>6</u>	Caries	0.1258	32.0	254.4
20	F	<u>8</u>	Caries	0.1458	34.0	234.4
21	F	<u>6</u>	Periodontal	0.3090	14.0	45.3
21	F	<u>7</u>	Caries	0.3658	24.0	65.7
21	M	<u>8</u>	Caries	0.1876	65.0	347.5
25	F	<u>4</u>	Caries	0.0198	5.0	252.5
26	M	<u>8</u>	Caries	0.4134*	28.0	67.7
26	M	<u>6</u>	Caries	0.2892	60.0	207.6
26	F	<u>6</u>	Caries	0.4930*	115.0	233.2
27	M	<u>8</u>	Caries	0.3958*	14.0	35.4
29	M	<u>6</u>	Caries	0.4400*	2.0	4.5
Mean 22.6 years						Mean 135.8 p.p.m. Standard Error 28.9

Average loss of tooth powder during pulverising, by weight = 5.7%

* Enamel powder halved, two separate diffusions, colorimetric estimations compared and pooled

might be taken up by the outer enamel of the teeth. However, the dental epidemiological study² referred to previously revealed that for these subjects, 98% of the Malays and 86% of the Indian and Pakistani group reported that they used toothpaste.

It can be reported that the Department of Chemistry of the University of Malaya are now investigating the fluoride content of Malayan foods, with specific reference to foods which are believed to be utilized by the Malays, Indians and Pakistanis but not by the Chinese.

CONCLUSIONS

1. It would appear likely that comparisons between the mean estimated fluoride content of the enamel of the teeth

of different groups of subjects are valid only if age specific.

2. For groups of young adults of Singapore of similar means age the Chinese were demonstrated to have a very significantly lower mean estimated fluoride content of the enamel of the teeth when compared with results for teeth of the Malaysians, Indians and Pakistanis.

3. It has been previously demonstrated that for the young adult males of Singapore, the Chinese had a very significantly higher D.M.F. rate than the Malaysians, Indians and Pakistanis.

4. The lower fluoride content of the enamel of the teeth of the Chinese is anticipated to be due to a difference in their dietary regime as compared with those of the Malaysians, Indians and

Pakistanis. Further investigations in this regard are proceeding.

ACKNOWLEDGMENTS

Sincere and grateful thanks are extended by the author to the many members of the staff of the University of Malaya and of the Governments of Singapore and of the Federation of Malaya for their most helpful advice, assistance and encouragement during the assignment reported in this and the previous two papers.

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BIBLIOGRAPHY

1. Traitman, E. K.: Incidence of Oral-dental Diseases in Malaya. B.D.J. 87:87, 1949.
2. McCombie, F. and Chua, S. C.: Dental Epidemiology in Malaya. II. A Survey of Chinese, Malay & Indian Young Adult Males in Singapore. J.C.D.A. 23:687.
3. Gittins, N. H.: Fluoridation of the Singapore Water Supply. J.U.M.D.S. 6:13, 1954/56.
4. Sognnaes, R. F.: A Condition Suggestive of Threshold Dental Fluorosis observed in Tristan da Cunha, I, Clinical Condition of the Teeth. J.D.R. 20:203, 1941.
5. Sognnaes, R. F. and Armstrong, W. D.: A Condition Suggestive of Threshold Dental Fluorosis observed in Tristan da Cunha, II, Fluorine Content of the Teeth. J.D.R. 20:315, 1941.
6. Shaw, J. H., Gupta Om P. and Meyer, M. E.: High Fluoride Content of Teeth from Communities with Low Fluoride Water Supplies. Am. J. Clinical Nutrition, 4:246, 1956.
7. Libin T. Chang and T. P. Chan: Fluorine Contents of Foodstuffs in Szechuan. Chinese J. of Physiol. 15:263, 1941.
8. Brudevold, F., Gardner, D. E. and Smith, F. A.: The Distribution of Fluorine in Human Enamel. J.D.R. 35:420, 1956.
9. McClure, F. J. and Likins, R. C.: Fluorine in Human Teeth Studied in Relation to Fluorine in Drinking Water. J.D.R. 30:172, 1951.
10. McClure, F. J.: Fluorine in Dentine and Enamel of Sound and Carious Human Teeth. J.D.R. 27:287, 1948.
11. Manly, R. S. and Hodge, H. C.: Density and Refractive Index Studies of Dental Hard Tissues, I, Methods for Separation and Determination of Purity. J.D.R. 18:133, 1939.
12. Singer, L. and Armstrong, W. D.: Determination of Fluoride. Anal. Chem. 26:904, 1954.
13. Icken, J. M. and Blank, B. M.: Determination of Fluorides. Anal. Chem. 25:1741, 1953.

A general practitioner is the symbol of dentistry—past, present and future. He is the standard bearer upon whom dentistry places its hopes. . . . In his hands lies the destiny of dentistry as a profession, as well as the oral health of the nation.

It is he who feels the pulse beat of the dental patient and who answers to the public for dentistry's failures and successes. . . . A general practitioner is responsible to himself and to society to keep abreast of the changing scientific scene. He must familiarize himself with new drugs, new techniques and dentistry's social and economic relationship to society. He must be aware of legislation affecting his welfare as a dentist and dentistry's welfare as a profession. . . .

In short, the general practitioner is dentistry. . . .

Electromyographic Study of Head Position*

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INTRODUCTION

That the posterior neck muscles are concerned with the posture of the head has long been accepted as fact by men who have studied such matters.

The head, perched precariously at the top of the vertebral column through its half spherical occipital condyles, is not in a condition of static equilibrium. Its centre of gravity lies forward of the condyles and therefore presents a mechanical arrangement that is constantly conducive to a forward toppling. This is clearly evident when one falls asleep while sitting erect. The post-cervical muscles, which connect the occipital squama with the cervical and thoracic vertebrae, provide the muscular antagonism to the falling forward tendency of the head.

Brodie² has postulated that the posture of the head involves more than the tensions of the posterior neck muscles, for on examination it appears evident that these muscles are of a proportion in excess of that required for counterbalancing the downward force of gravity.

The anterior aspect of the head is concerned with a number of functions involving the masticatory, suprahyoid and infrahyoid musculature. The forces resulting from the movement of parts in the anterior region are added to the load imposed by gravity and both must be balanced by the post-cervical group if the head is to be held in an erect position.

This supports the view that the posture of the head is maintained by synergistic

activity of the anterior and posterior neck muscles.

It was decided to investigate the hypothesis, as advanced by Brodie and others, concerning the posture of the head. The electromyographic study herewith presented sought to determine whether reciprocating synergies exist between the post-cervical and the infrahyoid muscles during the upright 'resting' posture of the head and during functional changes in head position.

REVIEW OF THE LITERATURE

The basic functional unit of skeletal muscle is the motor unit, consisting of the cell body of a lower motor neuron and the muscle fibres innervated by its axon. (Sherrington)²⁷

A minute percentage of the energy liberated in a contracting muscle is electrical and is termed the action current or action potential. (Hill)¹¹ The gradation of muscular response is partially attributed to the number of recruited motor units and the frequency of motor unit discharges. (Adrain and Bronk)¹ The action or spike potentials produced by the contracting muscle is directly proportional to the strength of the contraction. (Gellhorn)⁷

Movement of a part of the body is dependent upon muscular activity; voluntary movement is based upon muscular activity in association with volitional nervous control. (Goody)⁸ In simple moving action potentials, while the flexor (antagonist) relaxes and shows no perceivable sign of innervation. (Steindler)²⁸ This is Sherrington's "Law of Reciprocal Innervation and Inhibition." The regula-

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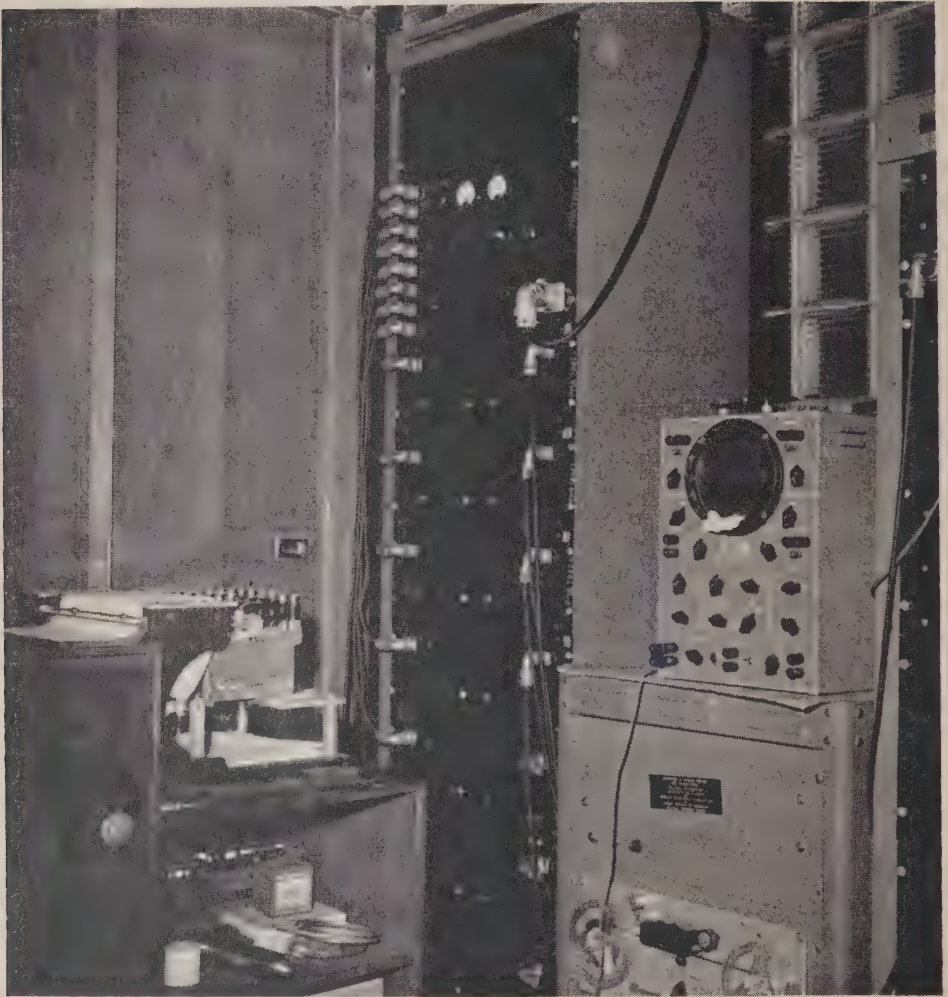


FIG. 1. Photograph of the Electromyographic Equipment.

tion of reciprocal innervation is the mechanism of synergy. (Hoefer¹², Fulton)⁶

As early as the first century Claudius Galen remarked that maintenance of position involves no gross muscular effort. Many years later, Borelli stated "that the falling forward is prevented solely by the extensor muscles." The principal findings of Magnus¹⁷ investigations on decerebrate animals was that posture is an active process and is the

result of a great number of reflexes. Hellebrandt¹⁰ showed that the standing equilibrium of the human body involves constant adjustments and re-adjustments of postural contractions to counteract the action of external forces which tend to displace the body; it is in no sense a static condition.

Gravity exerts a constant force upon the erect body, tending to cause it to flex at every point of rotation. The axes

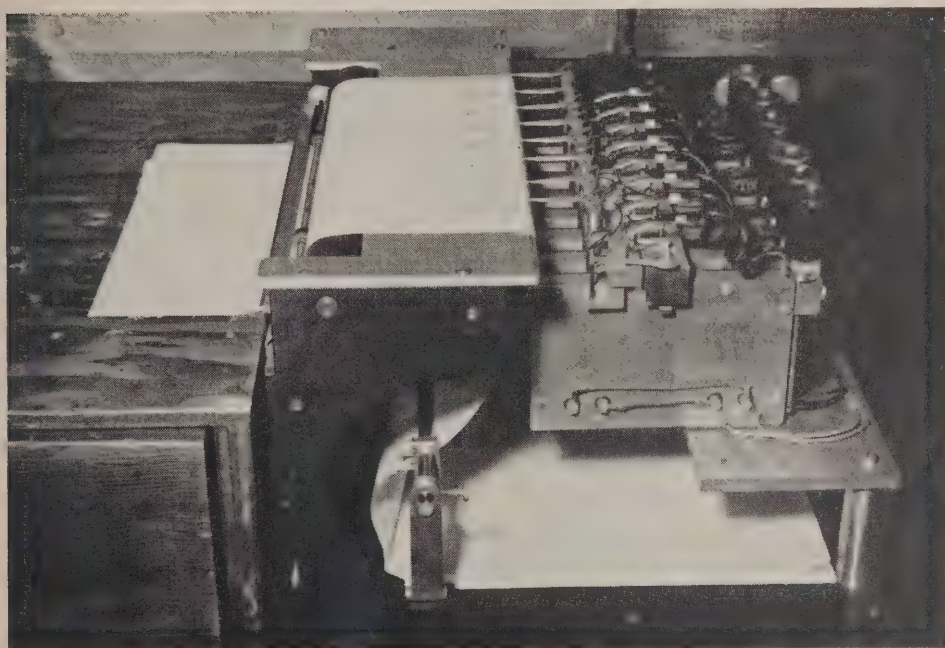


FIG. 2. Photograph of the Crystographic Inkwriter.

of such rotation naturally determine the direction in which movement will take place. Acting to prevent this flexion are the extensor muscles controlled by their reflexes. Sherrington²⁰ reported that the reflex tonus displayed by the extensor muscles of decerebrate animals was postural contraction. Liddell and Sherrington¹⁶ have demonstrated that the basis of posture is the stretch or myotatic reflex and these reflexes are of a proprioceptive nature.

The receptors lie within the muscle fibres and are referred to as muscle spindles. The anatomical evidence that the receptors of stretch are the neuromuscular spindles has been advanced by Szentagothai²⁰, and further corroborated by McIntyre¹⁹ who stated that "stretch reflexes are characteristic for anti-gravity muscles and the muscle spindles are the stretch sensitive structures specifically concerned in eliciting the myotatic reflex."

Gellhorn⁷ has shown that the myotatic reflex arising in a single muscle excites not only this muscle and its synergists at the same joint but also those synergists which act on a neighboring joint and form with the stretched muscle a functional association. Synergy refers to integrated, co-ordinated action between muscle groups; it imparts rate of speed, smoothness and range to a particular motion.

Electromyography has been developed to permit a study of neuromuscular activity and also kinesiological behaviour of muscles; it is particularly applicable to the present endeavour.

MATERIAL AND METHOD

Subjects

Fifteen subjects of normal physical development, ranging in age from 19 years to 33 years, constituted the sample.

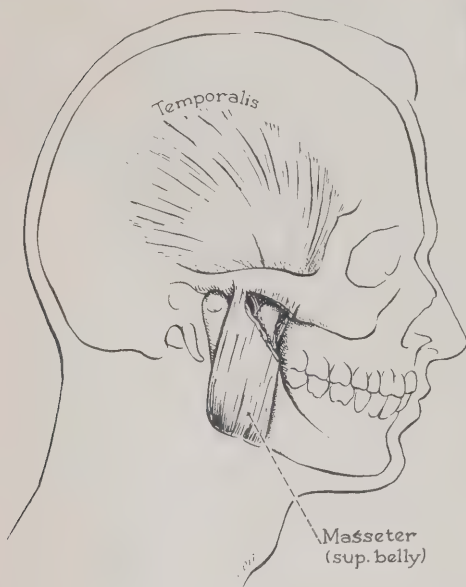


FIG. 3.

Diagram of the Temporal and Masseter Muscles.

Apparatus

The records were taken with an Offner Type eight channel electromyograph; this instrument was equipped with an audio unit, an eight element crytographic ink-writing recorder and a synchronous controlled speed motor-driven paper feed. (Fig. 1, 2) The "Lo", "Hi" condenser settings were .002 and 0.0 respectively. The amplifiers were calibrated to give a 5 mm. deflection of the pens with a 100 micro volt input at a gain of 4, and an 8 mm. deflection at a gain of 5 (gain 4 was used throughout except where indicated on the post-cervicals). Eight comparable records were taken simultaneously at a constant paper speed of either 2.5 or 5.0 cm. per second.

The nature of the study demanded the avoidance of all possible artificial action potentials such as might be induced by apprehension or mechanical trauma. This made necessary the employment of surface rather than needle electrodes.

The surface electrodes resemble silver alloy discs of one-fourth inch diameter

and are attached to the skin overlying the muscle by an adhesive, non-flexible collodion liquid. Redox electrode paste, a salt-jelly substance, was interposed between the electrode and skin to promote transmission of the electrical current which arises from a general area beneath and approximating the electrode.

Location of Electrodes

Since it was decided to include a simultaneous registration of the masseter, temporal, infrahyoid and post-cervical muscles (Fig. 3, 4, 5), the areas for electrode placement were delineated as follows:

Temporal and Masseter Muscles

The subject was instructed to clench the teeth forcibly several times in the accustomed occlusal contact relationship and the areas of greatest lateral distention were marked bilaterally with an indelible pencil.

Infrahyoid Muscles

The subject was instructed to rotate the head in order to locate the tendinous

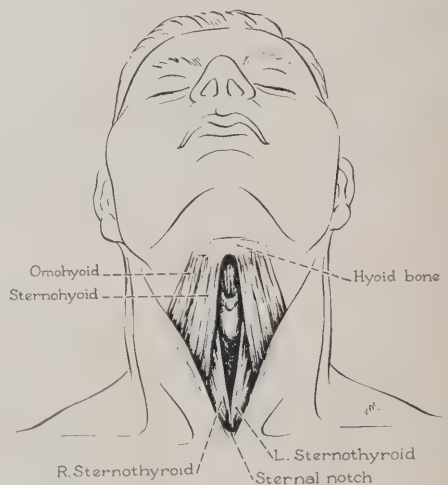


FIG. 4

Diagram of the Infrahyoid Muscles.

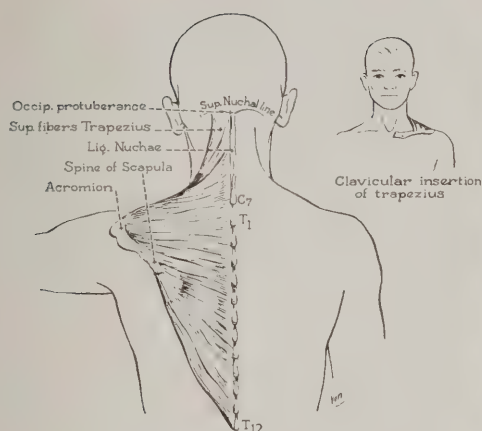


FIG. 5.

Diagram of the Trapezius Muscle (Post-cervical).

origin of the medial head of the Sternocleidomastoideus muscle. With the finger of the operator placed just medial to this boundary, the infrahyoid muscles in the area below the thyroid cartilage were located by having the subject swallow. This area was marked with indelible pencil and the procedure was repeated on the opposite side after the subject had rotated the head in the opposite direction. Surface electrodes were placed bilaterally with two on each side in such a manner that they were positioned inferior to the platysma and between the medial boundaries of the two sternomastoid muscles.

Post-Cervical Muscles

The external occipital protuberance was first palpated and then the subject was instructed to extend the head against the resistance offered by the author's hand; the mid-line was now easily palpated and the areas to receive the electrodes were marked one-half inch on either side of same and within the limits of the superior fibres of the trapezius muscles.

The delineated areas were now rubbed with a gauze pad saturated in acetone in order to lower the surface resistance of the skin,

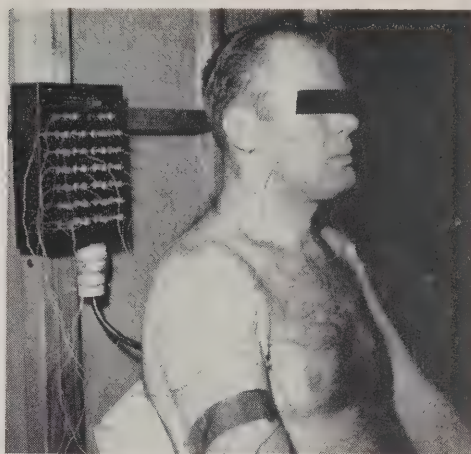


FIG. 6.

Electrode Location for Temporal and Masseter Muscles.

In electromyographical studies some standard means of comparing electrical activity of one muscle or one group of muscles to another must be established and a reference area which is relatively electrically inactive and which lies in close proximity to the units under study is usually selected. This method is commonly referred to as the single or monopolar electrode technique of recording the electrical activity of muscle. In this instance the ear lobes were chosen as the reference area for the temporals and masseters. (Fig. 6) Paired electrodes were employed in obtaining recordings from the post-cervicals and infrahyoids; (Fig. 7, 8) in this method, paired electrodes are placed on the skin overlying the muscle and recordings are thus made of the electrical activity occurring between them.

Experimental Procedure.

The subject was seated on a plain-backed chair in an erect position with hands on thighs and feet flat on the floor. The head was held naturally and the mandible was assumed to be at its resting position, i.e., with teeth unclenched.

All movements to be studied were rehearsed prior to the taking of records

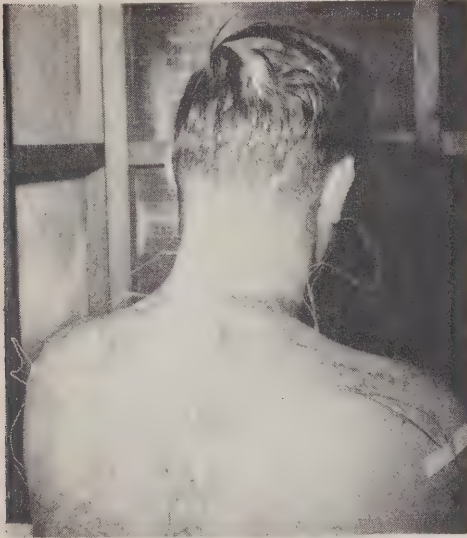


FIG. 7.

Electrode Location for Post-cervical Muscles.

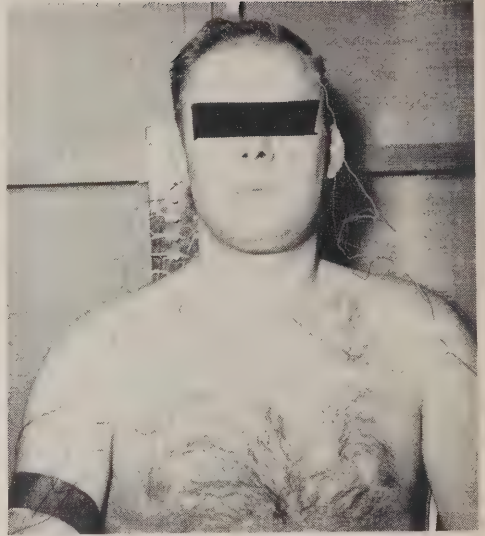


FIG. 8.

Electrode Location for Infrahyoid Muscles.

and each registration was made at least three times to obtain average response from each individual. Simultaneous recordings were made from the temporal, masseter, infrahyoid and post-cervical muscles while the subject was in a grounded Faraday cage.

Muscle activities studied.

I. Postural positions of the head.

- a) Head upright
- b) Head extended
- c) Head flexed
- d) Head rotated — right and left

II. Resistive movements of the head.

The b), c) and d) movements noted above were performed against the resistance offered by the operator's hand, each beginning with the head in the upright position.

III. Movements of the mandible.

- a) Forced occlusion of the teeth (isometric contraction of the temporal and masseter muscles).
- b) Opening of the mandible from postural rest position.
 - 1. Wide, slowly and held
 - 2. Wide, rapidly and held

IV. Respiratory.

- a) Deep inspiration, held.

FINDINGS

I. Postural positions of the head.

- a) Head upright. (Fig. 9)

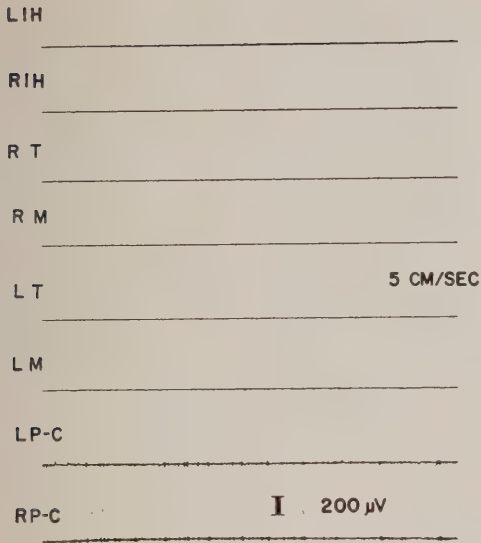
In the steady upright position slight action potentials were always elicited from the post-cervical muscles, although these varied in amplitude from subject to subject. The infrahyoid and masticatory muscles were silent to all intents and purposes.

- b) Head extended. (Fig. 10)

When the head was extended, the post-cervical muscles yielded action potentials that were greater than those obtained at rest and in some cases the infrahyoid and temporal muscles registered a low response. The masseter muscles were silent.

- c) Head flexed. (Fig. 11)

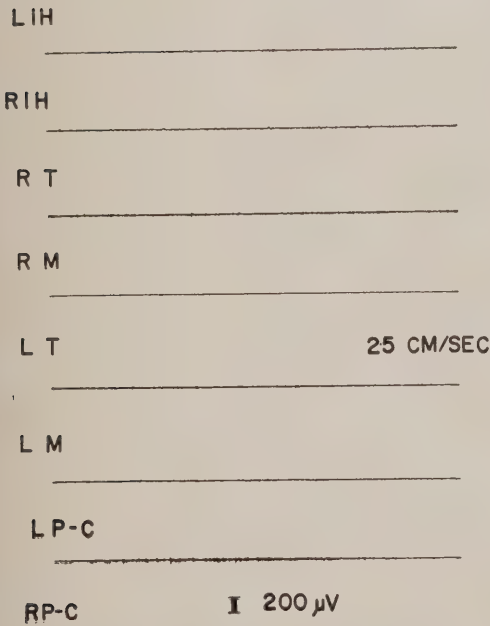
When the head was flexed, there was very slight action in the infrahyoids and no response from the post-cervical muscles unless the movement was carried to an extreme degree, when a minimal response was occasionally elicited. The temporal and masseter muscles were silent.



HEAD UPRIGHT

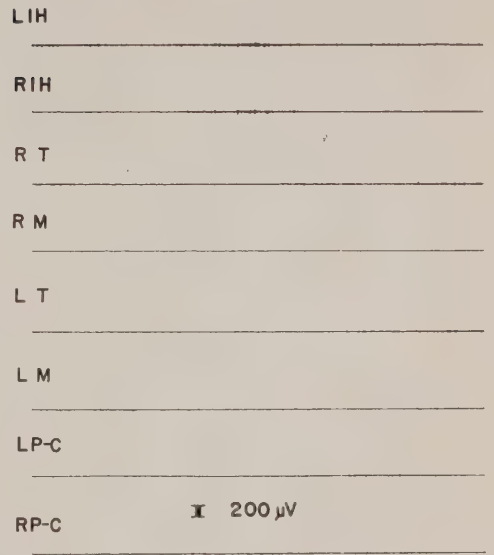
FIG. 9.

Gain 5 on Post-cervical Muscles.



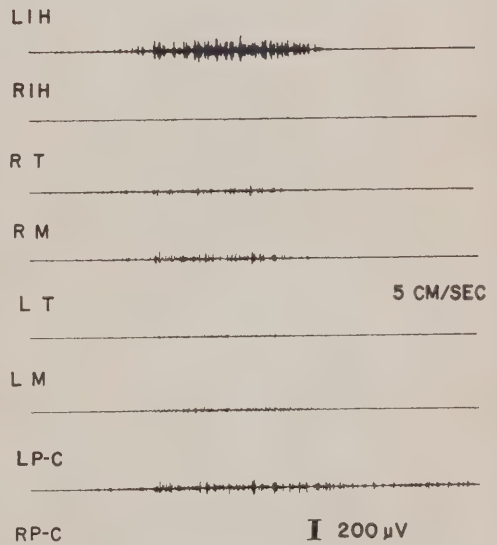
EXTENSION

FIG. 10.



FLEXION

FIG. 11.



ROTATION RIGHT

FIG. 12.

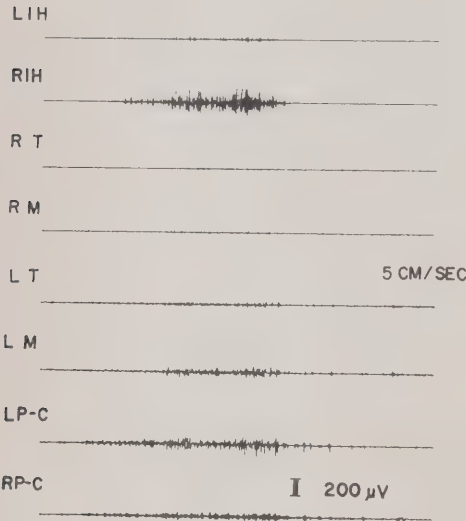
Gain 5 on Post-cervical Muscles

d) Head rotated to the right. (Fig. 12)

When the head was rotated to the right, action potentials were recorded from the post-cervical muscles of that side and from the infrahyoid muscles of the opposite (left) side. At the same time fainter signals were registered from the opposite pairs, i.e., the left post-cervical and right infrahyoid groups. In addition, some activity was registered bilaterally by the Temporalis and Masseter muscles.

e) Rotation of the head to the left. (Fig. 13)

As might be expected the pattern of activity was the same as that in rotation to the right, but reversed.



ROTATION LEFT

FIG. 13.

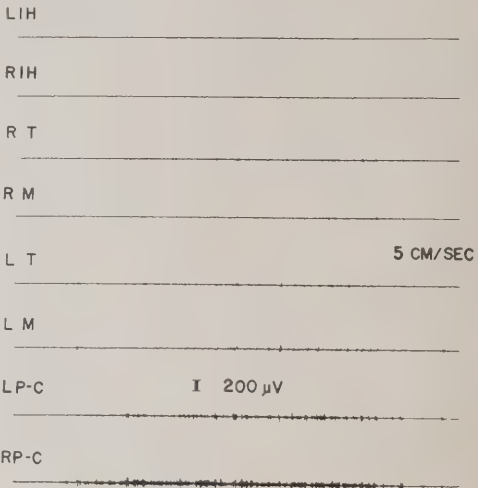
Gain 5 on Post-cervical Muscles.

II. Resistive movements of the head.

a) Extension of the head against resistance. (Fig. 14)

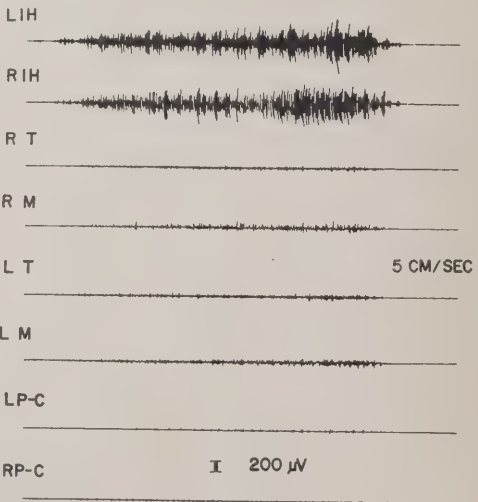
The difference noted in this action when performed against resistance was the same as noted previously when the motion was free; i.e., the post-cervical muscles exhibited activity but with resistance the amplitude was greater. Minimal activity was registered by the masseter and temporal muscles and the infrahyoids were relatively silent.

b) Flexion of the head against resistance. (Fig. 15)



EXTENSION AGAINST RESISTANCE

FIG. 14.



FLEXION AGAINST RESISTANCE

FIG. 15.

In this action the potentials from the infrahyoid muscles were markedly increased in number and amplitude over those registered during the free movement. Little activity could be discerned in the post-cervical groups but some was noted in the temporal and masseter muscles.

c) Rotational movements of the head against resistance. (Fig. 16, 17)

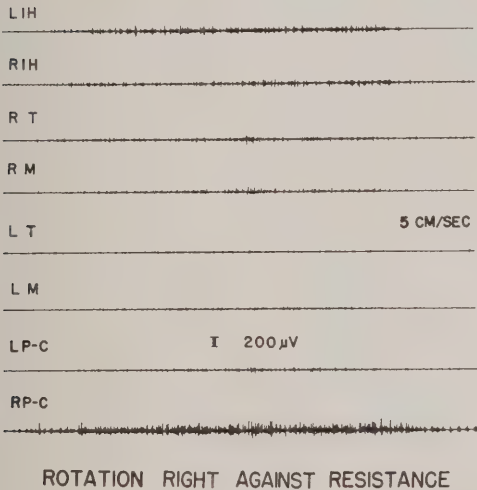


FIG. 16.

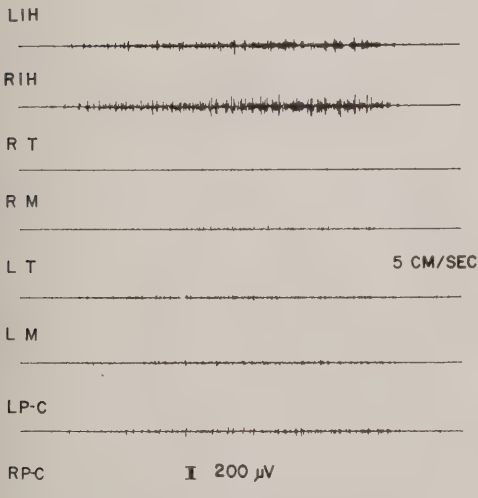


FIG. 17.

When the head was rotated to the right or left against resistance, the responses obtained from the various muscle groups were similar in kind but greater in number and amplitude than those elicited during the free movements. The post-cervical muscles of the side toward which the head was rotated and the infrahyoid muscles of the opposite side were shown to be active. Similarly, the temporal and masseter muscles registered action potentials which, although less intense than the above, were nevertheless greater than in free movement.

III. Movements of the mandible.

a) Forced occlusion. (Fig. 18)

The hard clenching of the teeth represents an isometric contraction of the masseter and temporal muscles. These muscles yielded action potentials of considerable amplitude but there was slight activity in the post-cervical muscles and even less in the infrahyoid group. What activity was elicited was

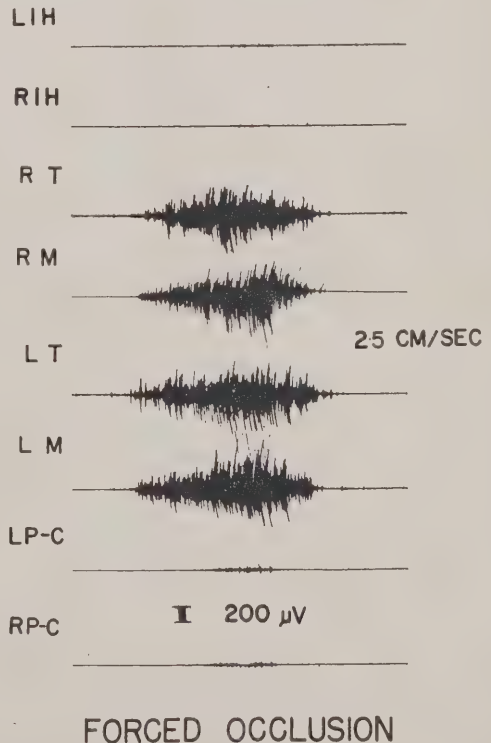


FIG. 18.

- associated with the state of maximal contraction of the masticating muscles.
- b) Wide opening of the mandible, slow. (Fig. 19)

When the mouth was slowly opened and in the wide open position, activity was recorded from the infrahyoid, temporal and masseter muscles. The activity of the post-cervical groups was minimal.

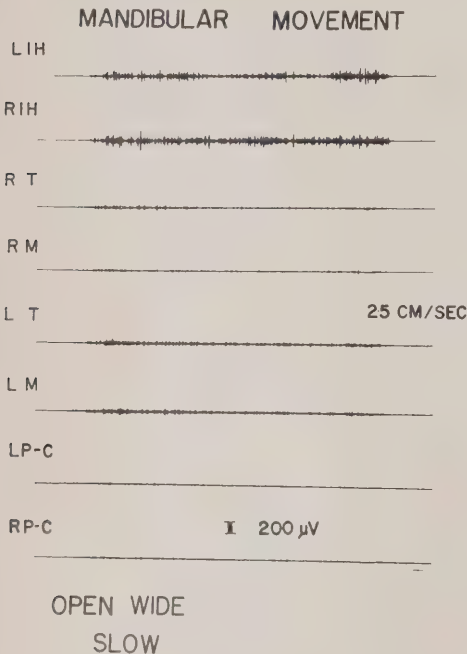


FIG. 19.

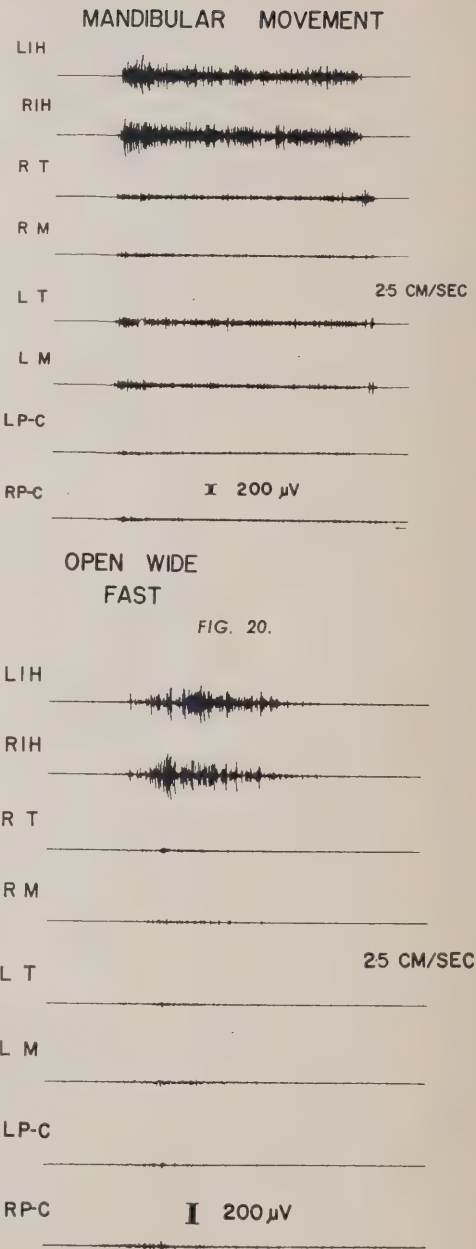
- c) Wide opening of the mandible, fast. (Fig. 20)

In rapid wide opening of the mouth, action potentials of great magnitude and number were registered by the infrahyoid muscles. Activity denoting greater participation was also noted in the post-cervical and masticatory muscles as compared to slow opening.

IV. Respiratory.

- a) Deep inspiration. (Fig. 21)

When the subjects were instructed to inspire deeply and hold the breath, the electrical activity of all of the muscles increased. The action of the infrahyoid groups exhibited amplitudes that were considerably increased.



DEEP INSPIRATION

FIG. 21.

Gain 5 on Post-cervical Muscles.

DISCUSSION

In analyzing the observations of any electromyographic study great caution must be exercised to take into account all modifying factors that might be operating. We have here a method that yields few sharp and clear answers to our questions because in the majority of instances we cannot make a direct approach to the tissue we are studying save by needle electrodes. These, by their very nature, introduce the possibility of artifacts of trauma. In the present study, therefore, they have been avoided.

When readings of quiet upright posture were studied it was noted that action potentials, albeit of low amplitude, were always registered from the post-cervical electrodes, and those over the infrahyoid and masticating muscles yielded no responses. One might postulate from this that there was equilibrium between the posterior neck muscles and gravity such as obtains in some parts of the body. This is probably not the case judging by the size of the neck muscles in relation to the relatively slight difference between the front and back of the head.

It must be recalled that the electrodes were positioned over the Trapezius which is probably not as important a postural muscle as the Semispinalis Capitis which lies beneath it. It is probable that readings made from the latter would have had greater amplitude if it could have been approached.

Nor is it probable that gravity alone is responsible for antagonizing the post-cervical muscles as might be inferred from the silence of the masseter, temporal and infrahyoid muscles. Lying just anterior to the axis is the Longus Capitis, another large and powerful muscle. It is likely that this muscle, plus gravity, counteracts or balances the Semispinalis Capitis and Trapezius. The variation in amplitude from subject to subject is interpreted as reflecting individual variation. Joseph and Nightingale¹³ demonstrated similar variation in action poten-

tials in the quadriceps and hamstring muscles when subjects were standing at ease, and attributed this difference to variations in posture.

The above interpretation seems to be supported by the readings obtained during extension of the head. The amplitude of the post-cervical responses was increased and there was in some instances a slight response from the temporal and infrahyoid muscles. In extension the distance from cranium to thorax is increased anterior to the axis of rotation and decreased behind it. Thus the muscles connecting cranium to mandible, mandible to hyoid bone and hyoid bone to sternum and clavicle would be inhibited according to Sherrington's Law of "Reciprocal Innervation and Inhibition". Such inhibition, however, is never complete, hence the low amplitude responses seen here.

The action potentials elicited when the head was flexed indicated that the anterior chain of muscles plays a minor role in this act since all were relatively silent as were also the post-cervicals. It is probable that gravity alone could cause this movement with a complete loss of consciousness, as when a subject falls asleep while sitting upright, but it is likely that there is muscle participation in the conscious act. Thus contraction of the anterior cervical muscles would initiate the movement and the posterior group would act to limit the movement and stabilize the attained position. Both would require muscular activity.

In the rotary movements of the head, action potentials were recorded from all of the muscles studied. They varied, however, in amplitude. Thus in rotations to the right, the right postcervicals and the left infrahyoids showed greater activity, and in movements to the left the opposite was true. This behavior seemed to indicate that in the case of the post-cervicals their function was chiefly that of lending smoothness to the act. In rotation to the right the chief actor is probably the left sterno-mastoid muscle which, upon contracting, throws the anterior

part of the head, e.g. the chin point, to the right, and the posterior part, e.g. the external occipital protuberance, to the left. Thus the right post-cervicals would tend to contract and the left would be stretched.

Turning to the front of the head, the same contraction of the sternomastoid muscle would carry the chin not only to the right but serve also to elevate it, as in torticollis. Both actions would disturb the resting position of the hyoid bone. Its elevation would be resisted by all of the hyoid muscles but its lateral movement to the right mainly by the muscles of the left side.

The slight difference in behavior between the masticating muscles of the two sides indicated that there were unbalancing forces operating on the mandible during rotary movements of the head. The position of the electrodes on the masseter and temporal muscles revealed their activity principally in sagittal motion whereas rotary movement would be more apt to elicit activity, if present, from the most posterior fibres of the Temporalis and the Pterygoideus Externus, a muscle that was not studied.

When the various movements referred to above were performed against resistance the differences noted in the electromyogram were those of amplitude rather than of kind. This is in agreement with Steindler's²⁸ statement that the response of muscles varies in amplitude with the resistance acting against it. In the present study it was also noted that such resistance tended to call forth responses from accessory groups of muscles that were relatively silent in unresisted movements.

The low state of activity of the post-cervical and infrahyoid muscles during forced clenching of the teeth was not a finding to cause surprise because in this act of isometric contraction resistance is met in the teeth rather than in other groups of muscles. The difference in the position of the mandible in its 'resting' as opposed to its occluded position is a matter of only two or three millimeters and

much more power is required for the isometric phases of mastication than for the isotonic.

When the isotonic movements were studied as in slow mouth opening, the infrahyoid, temporal and masseter muscles all showed activity. This could only be interpreted as stabilization action since the Masseter and Temporalis are closing muscles. The activity of the infrahyoids might be taken as indicating an active role of these muscles in mouth opening, but Klatsky's¹⁴ cinefluorographic studies have indicated that such activity might more properly be ascribed to the stabilization of the hyoid bone during jaw movements. It is felt that the chief actor in jaw opening is the external pterygoid muscle.

An accentuated picture was obtained when the mouth opening movement was performed rapidly. The amplitude of all action potentials was markedly increased, which accorded to Steindler's²⁸ observation regarding the rate of speed at which a motion is performed. In addition, there was a tendency for the head to pitch forward followed by a response from the post-cervical muscles which had been almost silent in the slow movement.

In deep inspiration there was electrical activity in all muscles studied and those of the infrahyoids were of considerable amplitude. The inferences placed on these findings were as follows: In deep inspiration the subject invariably extended the head to some degree, thus calling forth an increased response from the post-cervical muscles. As noted previously such extension places all of the muscles anterior to the axis of the head under 'tension', viz. masseter and temporal, supra- and infrahyoids. Had it been possible to include the suprahyoid muscles, and particularly those attached anteriorly to the hyoid bone, increased activity to match that of the infrahyoid group would probably have been noted. Such activity would not only stabilize the hyoid bone but would as well enlarge the airway.

SUMMARY AND CONCLUSIONS

An electromyographic study of the post-cervical and infrahyoid muscles has been presented. It was designed to investigate the possible role of these muscles in the posturing of the head and was conducted on a sample of fifteen subjects ranging in age from nineteen to thirty-one years of age.

The recordings indicated the participation of the post-cervical musculature in the maintenance of the erect position of the head as well as in functions involving the musculature of the anterior region of the head and neck. The action potentials showed qualitative, and more particularly, quantitative differences when the various movements were performed against resistance and greater than usual speed.

The recordings indicated that rotary movements of the head were accompanied by reactions of the infrahyoid group of muscles which tended to stabilize that bone during such movements. Former studies have shown this to be the case in sagittal movements such as mastication. (Thompson,^{30,31} Brodie³¹).

All of the findings indicated that movements of the head were always synergistic with certain muscles operating to contribute smooth action and the coordination of the several parts.

ABBREVIATIONS IN ILLUSTRATIONS

LIH	Left Infrahyoid
RIH	Right Infrahyoid
RT	Right Temporal
RM	Right Masseter
LT	Left Temporal
LM	Left Masseter
LPC	Left Post-Cervical
RPC	Right Post-Cervical

BIBLIOGRAPHY

- Adrian, E. D., and Bronk, D. W.: The Discharge of Impulses in Motor Nerve Fibers: Part II. Frequency of Discharge in Reflex and Voluntary Contractions, *J. Physiol.* 67:119-151, 1929.
- Brodie, A. G.: Anatomy and Physiology of Head and Neck Musculature, *Am. J. Orthodontics*, 36:831-844, 1950.

- Chissin, C.: Opening Movements of the Mandible and the Part Played by the External Pterygoid Muscle, *Trans. by Brodie, A. G., from Arch. für Anat. u. Entwicklungsgesch.* pp. 41-67, 1906.
- Chusid, J. C., and McDonald, J. J.: Correlative Neuroanatomy and Functional Neurology, ed. 7, New York, 1954, Lange Medical Publishers.
- Corbin, K. B., and Harrison, F.: Function of Mesencephalic Root of Fifth Cranial Nerve, *J. Neurophysiol.* 3:423-435, 1940.
- Fulton, J. R.: Physiology of the Nervous System, ed. 3, New York, 1949, Oxford Univ. Press, pp. 1-193.
- Gellhorn, E.: Physiological Foundations of Neurology and Psychiatry, Minneapolis, 1953, Univ. of Minnesota Press, pp. 1-140.
- Goody, W.: Sensation and Volition, *Brain* 72:312-339, 1949.
- Hafeez, A. M.: Action Potential Studies of the Normal Quadriceps Femoris Muscle, University of Illinois M.S. Thesis, 1950.
- Hellebrandt, F. A.: Standing as a Geotropic Reflex, *Am. J. Physiol.* 121:471-474, 1938.
- Hill, A. V.: The Energy Involved in the Electrical Change in Muscle and Nerve, *Proc. Roy. Soc. (London)* 92B:178-184, 1921.
- Hoefler, P. F. A.: Electromyographic Study of the Motor System in Man, *Mon. Review of Psychiat. and Neurol.* 117:240-256, 1949.
- Joseph, S., and Nightingale, A.: Electromyography of Muscles of Posture: Thigh Muscles in Males, *J. Physiol.* 126:81-85, 1954.
- Klatsky, M.: A Cinefluorographic Study of the Human Masticatory Apparatus in Function, *Am. J. Orthodontics and Oral Surg.* 26:664-670, 1940.
- Last, R. J.: The Muscles of the Head and Neck, *A Review*, *Int. Dent. Jour.* 5:No. 3, 338-354, 1955.
- Liddell, E. G. T., and Sherrington, C. S.: Reflexes in Response to Stretch (Myotatic Reflexes) *Proc. Roy. Soc. (London)* 96B:212-42, 1924.
- Magnus, R.: Physiology of Posture, *Lancet* 2:531-36, 1926.
- Moyers, R. E.: An Electromyographic Analysis of Certain Muscles Involved in Temporomandibular Movement, *Am. J. Orthodontics* 36:481-513, 1950.
- McIntyre, A. K.: Afferent Limb of the Myotatic Reflex Arc, *Nature* 168:168-9, 1951.
- Partridge, M. L., and Rodriguez, A. A.: Electromyography in the Practice of Physical Medicine, *The Physical Therapy Review* 33:No. 3, 1953.
- Perry, H. T.: Implications of Myographic Research, *Angle Orthodontist* 25:No. 4, 179-188, 1955.
- Pruzansky, S.: The Application of Electromyography to Dental Research, *J. Am. Dent. A.* 44:49-68, 1952.
- : Electromyographic Measurement of the Function of the Muscles of Mastication in Man, *Proc. of Inst. of Med. (Chicago)* 19:315-16, 1953.
- : The Control of the Posture of the Mandible During Rotation of the Head, *J. D. Res.* 34:720, 1955.
- Rademaker, G. G. J.: On the Lengthening and Shortening Reactions and Their Occurrence in Man, *Brain* 70:109-126, 1947.
- Sherrington, C. S.: Postural Activity of Muscle and Nerve, *Brain* 38:191-234, 1915.
- : Some Functional Problems Attaching to Convergence, *Proc. Roy. Soc. (London)* 105B:332-362, 1929.
- Steindler, A.: The Mechanics of Normal and Pathological Locomotion in Man, Springfield, 1935, Charles C. Thomas, pp. 1-107.
- Szentagothai, J.: Anatomical Considerations of Mono-synaptic Reflex Arc, *J. Neurophysiol.* 11:445-54, 1948.
- Thompson, J. R.: Cephalometric Study of Movements of the Mandible, *J. Am. Dent. A.* 28:750-761, 1941.
- Thompson, J. R., and Brodie, A. G.: Factors in the Position of the Mandible, *J. Am. Dent. A.* 29:925-941, 1942.
- Walshe, F. M. R.: On the Role of the Pyramidal System in Willed Movements, *Brain* 70:329-354, 1947.
- Wiggers, C. J.: Physiology in Health and Disease, ed. 5, Philadelphia, 1949, Lea and Febiger, pp. 1-177.

Multiple Fracture of the Mandible

A. A. ANTONI, D.D.S., M.S.D., Toronto, Ontario

A Case Report

This case illustrates team work in the care of accident patients with injuries to more than one part of the body. The patient, a well nourished, well developed, nineteen year old white boy was first seen in the emergency room of the Toronto General Hospital, where he had been brought following a motor car accident.

CHIEF COMPLAINT

His chief complaint was severe pain in the jaw with inability to open and close his mouth, and pain with lack of function in his right leg.

HISTORY OF PRESENT ILLNESS

While driving back to his farm home from the neighbouring town he attempted to avoid hitting a dog, but struck a soft shoulder on the road and he and his car finally ended up in the ditch. He was taken to the nearest hospital, given first aid, and referred to the Toronto General Hospital.

EXAMINATION FINDINGS

Clinical examination revealed a slight swelling of the left face. There was tenderness at the left molar area of the mandible and around the temporal area. Intra-oral examination showed a break in the continuity of the ridge in the right molar area, and inability of the teeth to come into occlusion.

Radiographs showed a fracture through the left molar area of the mandible. This tooth itself was in poor repair. There was also a fracture of the left condyle with little displacement. A fracture of the right leg was also established radiographically. The patient was afebrile



FIG. 1. PREOPERATIVE. Note fracture at the molar area of the left mandible and the poor state of the molar. Note fracture at the left condyle.

with blood pressure and pulse within normal limits. At no time had he been unconscious. A general physical examination was essentially negative. A routine urinalysis was done and declared negative for sugar and albumen. The Hb was reported as 85%, with a red blood count of 4,800,000, and a white blood cell count of 8,500.

OPERATIVE PROCEDURE

Since the patient had not eaten for approximately five hours it was decided to proceed and reduce both the leg and the jaw fractures simultaneously. A team of medical surgeons reduced the leg fracture while the author and his team reduced the jaw fracture.

The following orders were left for the patient:-



FIG. 2. High lateral jaw film taken preoperatively. Note fractured left condyle.



FIG. 3. Immediate Post operative Lateral Jaw View.

1. 1000 cc 5% glucose and normal saline, I.V. immediately.
2. Morphine Sulphate, grs. 1/6 immediately.
3. Scopolamine, grs. 1/150, immediately.
4. To the O.R. in one hour.

Accordingly, at about two o'clock on December 10, 1953, the patient was anaesthetized with sodium pentothal intravenously and nitrous-oxide and oxygen endotracheally. The lower left first molar was removed, and Erich Arch wires suitably placed on both the upper and lower jaws.

The lower part of the face and the neck were then prepared with Cetavlon and sterile drapes were applied in the usual manner to allow visualization of the inferior border of the left mandible. An infra-manibular incision was made through the skin under the shadow of the mandible, extending forward from about the angle for about two inches. The dissection was carried down through the fascia and the platysma muscle. Haemostasis was maintained by clamping and tying all bleeders with 000 catgut. The

maxillary artery and accompanying vein were identified, dissected out, clamped, cut and tied with black silk. An incision was made through the periosteum of the exposed mandible, and this latter retracted from the labial and lingual aspects and the fracture site exposed. Drill holes were then properly placed on either side of the fracture line, stainless steel wire, gauge 26, threaded through and the wires twisted to the point where the reduction was maintained. Since there appeared to be minimal displacement of the

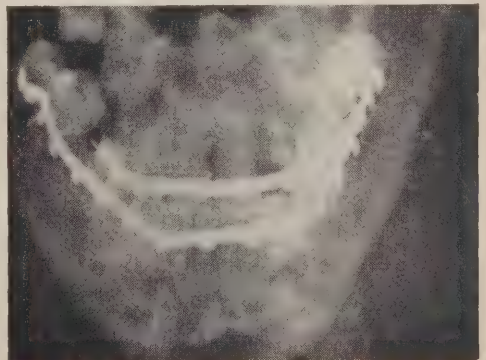


FIG. 4. Immediate Post operative P-A View.

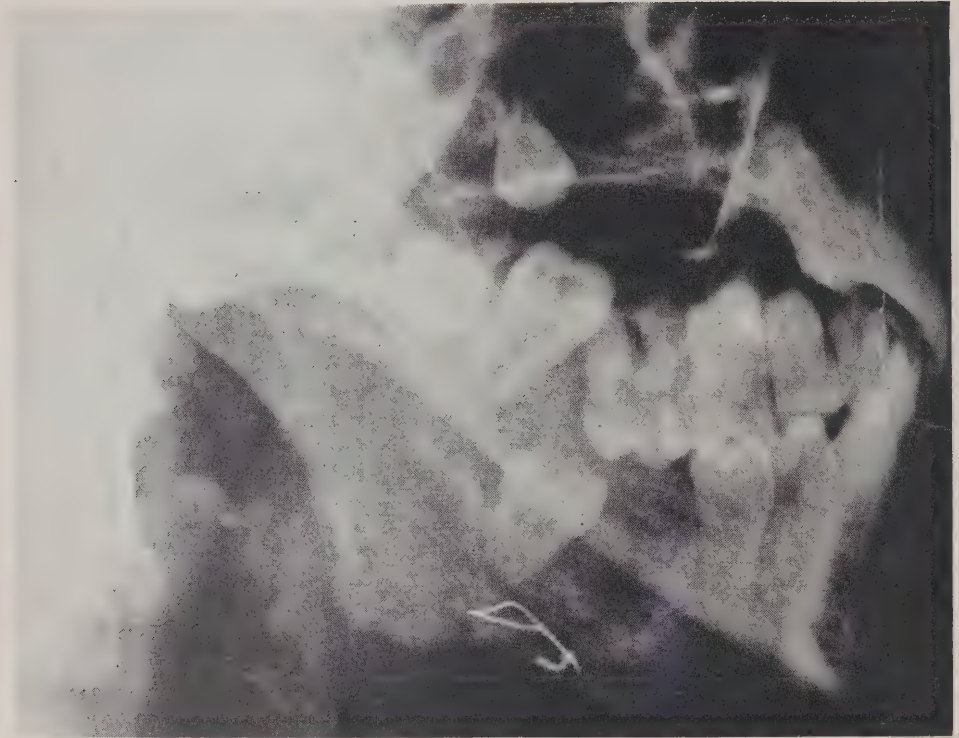


FIG. 5. Post operative showing complete union and healing. Note condyle.

fragments in the condylar fracture it was decided to leave this alone. The wound was then closed using 000 plain catgut for the muscle and the fascia, and medium black silk for the skin.

Proceeding into the mouth the teeth were then brought into occlusion and the jaws immobilized with intermaxillary elastics. While the above was being accomplished the other surgeons were attending the leg, and the procedures were so timed that we did not interfere with them or they with us, and that we would have the operation completed at approximately the same time. The patient was then returned to his room in good condition.

POSTOPERATIVE ORDERS:

1. High protein, carbohydrate and caloric liquid diet.
2. Demerol, 100 mgms, every four hours, if necessary, for pain.
3. 2 cc dicrysticin I.M., twice a day.
4. Sand bag to jaw until completely awake.

The postoperative recovery was uneventful. We removed our sutures on the fifth postoperative day. The surgeons discharged the patient at their convenience and we arranged to see him in the dental clinic every other week. During those visits we removed the elastics, cleaned his mouth and replaced new elastics. The arches were removed completely on the fifth week. The occlusion was good, there was no movement of the fragments. The jaws were quite stiff to open and close and the patient was given instruction in home jaw exercises. He is now completely asymptomatic and has full normal function.

EDITORIAL

C.D.A. Retirement Savings Plan

At the time, some years ago, the Canadian Dental Association executive decided to investigate the advantages of establishing a Pension-Assurance Plan for members, it had before it evidence of a real need for unbiased guidance and some uniformity of action. It was all too often apparent that money had been put into contracts, which ultimately proved to be of limited value when measured against the prime intention of providing benefits for retirement.

An exhaustive survey of the available market was made, and after confirmation from our Consultant Actuaries that their policies were particularly suitable and premium costs lower than could be secured elsewhere, the present Underwriters of our Plan were accepted and recommended to the membership. The basis of these Pension-Assurance contracts was to transfer the emphasis from Death Benefit to Pension Benefit in a combination felt to be more in keeping with requirements and reality, and at the same time, by eliminating the high cost of commission salesmen, to offer such benefits at reduced rates. Again, with the full endorsement of our impartial consultants, the contracts provided for *guaranteed* benefit at *fixed* cost.

It was, and still is, felt that this provided members with a most economical and suitable means of obtaining some minimum retirement benefit combined with whatever Death Benefit was felt necessary according to the individual's

circumstances. To the best of our knowledge there is still no other contract offering the *guaranteed* benefits along individual policy lines which a dentist can secure at the same advantageous rates.

However, just as the "mortality" element of an insurance premium is based on averages, so the "interest" element is calculated on estimated average earnings over a long period. Thus if a comparison of the return under the guaranteed Pension Contract is made at any one particular time, with that which can be secured through some other medium of investment, it may be favourable or unfavourable. But it does not fluctuate. Recently a high level of returns on Provincial Bonds was noted, but the peak did not last long, and five per cent Bonds recently selling at a discount are now at a premium. The proof of the value of the C.D.A. Pension-Assurance Plan is the fact that no other Insurance Company is offering the same benefits at the same or lower cost. This applies generally to the other policies, such as Ordinary Life, Term Insurance, Family Income Benefits which are available through the Plan. This does not mean to say that at any one particular time there may not be some other Company offering as good, or even slightly better terms for a particular policy. This may happen for a period while the rates for our contracts are under review, but we are quite confident that in the vast majority of cases it is in the interests of members to find out

what the C.D.A. Plan can offer them.

The amendment to the Income Tax Act in regard to saving for retirement allowed a far wider scope in the media for deductible savings than most people envisaged. With the legislation coming at a time when stock prices had been rising for some time, there was, somewhat naturally, a growing demand for an organized basis of investing in a Fund purchasing stocks as an Association group. This group approach has distinct advantages over individual action, and a Plan of this nature has now been established with the Royal Trust Company as Fund Managers and Trustees. Briefly, it offers interchangeable investment in three funds — (1) A Government Bond Fund, (2) A Corporate Bond Fund, and (3) A Common Stock Fund. It has been arranged specially with a view to securing deductibility of contributions, which therefore

become "locked-in".

It is by no means desirable for anyone to tie up all his savings in a Plan having this restriction, but the proportion of one's savings which a person should allocate to a "locked-in" Plan and that which he should keep in more liquid form for use in emergencies, can be decided only by himself in the light of his particular circumstances. With this addition to the existing Life Assurance and Savings contracts, we feel that the membership have available to them as complete, as flexible, and as economical a means of securing protection and savings as is possible.

The Trust Company Plan has been fully described in a booklet which was sent to all members last month, and this booklet also gives various notes of general guidance which it is hoped will be of assistance in formulating or reviewing Savings and Insurance programmes.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

Additions

BOYLE, H. H.: Design for major cleft palate. 1957. 120p. illus.

THE CANADIAN CHAMBER OF COMMERCE and THE CANADIAN LIFE INSURANCE OFFICERS ASSOCIATION: Underwriting Canadian Health; an economic view of welfare programs by William Loughheed Associates, consulting economics, Toronto. 1957. 165p. tables.

DENTAL CLINICS OF NORTH AMERICA: Nov. 1957. I. Tumors of the oral regions by Hamilton B. C. Robinson, consulting editor. II. Modern practice in endodontics by Robert G. Kesel, consulting editor. Pages 619-924, illus.

FISCHER, B.: Clinical orthodontics. 1957. 477p. illus.

PEYTON, A. B.: Practical nutrition. 1957. 379p. illus.

SCHUBERT, J. and LAPP, R. E.: Radiation. 1957. 314p.

BOOK REVIEWS

Clinical Orthodontics. A guide to the sectional method. Prepared by: Bercu Fischer, D.D.S. Published by: W. B. Saunders Company. Pages: 478 with 1,332 illustrations. Price: \$17.00.

This text is, primarily, a sequel and elaboration of Fischer's original work, *Orthodontics (Diagnosis, Prognosis and Treatment)*, W. B. Saunders Co., published in 1952.

As is true of its predecessor, this book is intended strictly for the clinical orthodontist and, with the exception of some of the initial chapters, wherein "*The Individuality Hypothesis*", "*The Meaning of Normality*", "*The Functional and Esthetic Concept of Occlusion*" and "*Patterns of Malocclusion*" are discussed, it is of little value to the general practitioner of dentistry.

The initial half of the text (226 pages) discusses concepts of the individual normal functional occlusion, diagnosis, malocclusion and appliance techniques utilizing the edgewise mechanism via a sectional method.

The latter portion of this work (232 pages) consists of an "*Atlas of Case Reports*", whereby the author illustrates, clinically, his concepts of diagnosis, prognosis and treatment of variant malocclusions, chiefly distocclusions.

For many orthodontists, the more contentious issues of Fischer's concepts may exist in the following areas:

(1) His conviction that "artificial" retention is contraindicated, although he does advocate "temporary sectional retention". However, he does not take into account whether or not the changes, which occur in the periodontium during tooth movement, justify "artificial" retention.

(2) In the final stage in the management of his cases, the author "enlists the help of the dentist in planning the aesthetics of the case which may require dental operations not in the orthodontist's domain". He finds these procedures necessary due to undesirable changes in the dentition, which occur after appliances have been removed. The dental reconstruction is managed "by artificial means such as reshaping or rebuilding of teeth or by full coverage".

(3) The sectional method is designed to disturb as few teeth as possible for a minimum of time.

(4) Fischer feels that root resorption is an important and disturbing factor in orthodontic treatment. This may well be. Its occurrence should be investigated more thoroughly by the practising orthodontist. All too often, an orthodontic case is completed and "follow-up" roentgenograms are not secured.

This publication is presented in a logical sequence, although occasionally there is evidence of redundancy. It is exceptionally well illustrated, a credit to the author and his collaborators.

William A. Quigley.

Essentials of Histology. Prepared by Margaret M. Hoskins Ph.D. and Gerrit Belevander Ph.D. New York University. Third Edition. Published by: The C. V. Mosby Company. Pages 254 with 146 text illustrations and two colour plates. Price \$4.00.

The systematic and concise outline of the essential principles of histological study should make this text a valuable guide to the undergraduate in dentistry and dental nursing. In addition, this book could serve as an excellent review text for the dental practitioner. The authors have suggested that this text should find its place in the beginning courses of histology rather than as a reference text for details of advanced study in the field of basic science.

Controversial material has been wisely avoided for the students' benefit. The text includes several tables and summaries of diagnostic features of tissues and organs. The illustrations although quite adequate are somewhat diagrammatic but are in keeping with the elementary approach of material coverage in the book as intended by the authors.

The first few chapters deal with the classification of tissues: epithelium, connective tissues, muscle, hemopoietic and nervous tissues, with special chapters for coverage of blood and lymph, bone and cartilage.

These chapters prepare the student with a comprehensive outline of the fundamentals of morphology of tissues, so that he may have a fuller appreciation of detail study of the systems and organs that are dealt with in the following chapters: circulatory, integumentary, digestive, respiratory, urogenital and endocrine systems. Particular reference is paid to the oral cavity, the brain and special sense organs.

One should find this book easy to read and well indexed for reference purposes.

Russell A. Hugill.

A Manual of Stomatology. Prepared by: J. P. Walsh, M.B., B.S., D.D.Sc. (Melb.), L.D.S. (Vic.), F.D.S.R.C.S. (Eng. & Edin.), M.D.S. (N.U.I.) Hon. Causa. Published by: N. M. Peryer Ltd., New Zealand. Pages: 130. Price \$4.25 approx.

This being a small volume, its scope is naturally limited, therefore its usefulness to medical and dental practitioners is likewise limited. The book is based on a course of ten lectures given to fifth year medical students: why not issue the complete lectures in book form for medical practitioners rather than just the outline of related oral and systemic conditions which should be considered in any diagnosis and treatment plan? Then the medical practitioner who graduated before such material was included in the medical course would have a book of more practical use.

There is no need for such a book for recent graduates from a dental school — all the subject matter has been covered in much detail during their course of training and if it is necessary to read up on any phase of oral disease, there are plenty of text books available covering all aspects of oral and dental lesions, as well as local manifestations of the various systemic disorders.

The book as such, taking into account its size, is well organized, and calls attention to the important phases of oral conditions, where dental and medical practitioners should co-operate in diagnosis and treatment, and should encourage the practitioners in both fields to be more observant of any factors where consultation and combined efforts may assist in better health for the patient.

The chapters on Oral Medicine, Preventive Dentistry, Oral Diseases affecting general health, and

Oral Diagnosis should be of benefit to the medical practitioner in his attempt to diagnose and advise his patients in cases where oral conditions may be a factor in the patient's lack of general health.

Harrison J. Mullett

Guide To Medical Writing. Prepared by Henry A. Davidson, M.D. Published by: The Ronald Press Co., New York. Pages: 330. Price: \$5.00.

It was perhaps an injudicious decision for the editor of this journal to review, himself, Dr. Davidson's "Guide to Medical Writing." Our sins of commission and omission were focused far too sharply for our editorial conscience not to be disturbed.

This is an excellent book. To our knowledge it is the best step by step guide available on basic writing techniques for all health personnel. The book documents clearly and practically for the prospective author how to crystallize his ideas, organize his material and convert it to a readable form. Such topics as how to choose an arresting title, how to write vigorous sentences, how to achieve clarity and interest without sacrificing accuracy are explained. Other advice pertains to research methods, revision, arrangement of illustrations, and preparation of the final manuscript for the editor.

Such fundamentals as punctuation, spelling, grammar, footnotes, and bibliography are lucidly explained.

Dr. Davidson has followed his own advice and prepared his text in a direct, readable style which greatly enhances its value. For persons interested in preparing articles, writing books, book reviews, editorials, or abstracts a better text cannot be found.

Wesley J. Dunn.

Clinical Pedodontics. Prepared by: Finn, Chersaskin, Volker, Hitchcock, Lazansky, Parfitt, Thomas and Sharry. Published by: W. B. Saunders Company. Available in Canada from Mc-Ainsh & Co. Ltd. only. Pages: 664 — 275 illustrations — Price: \$12.00.

This book without a doubt, rates as one of the best treatises on children's dentistry that has been written to date. It is thorough, practical and will

be of great value to all those who take the opportunity to read it. All illustrations are first class with excellent art work, showing detail which is often missed.

It is obvious that many hours of research have gone into this book, not only because of the material but because of the method of presentation which is given in such a way as to be easily ab-

sorbed. The material consists of such subjects as parent counselling, the role of heredity, the handling of handicapped children, biopsy techniques and many other phases of children's dentistry upon which little emphasis has been placed in the past.

"Clinical Pedodontics" should be a "must" with all those doing work for children.

Gordon M. Jinks.

National Health Week

February 2nd to 8th, 1958 will see the annual observance of National Health Week, sponsored by the Health League of Canada, in co-operation with Departments of Health and Education from coast to coast.

During the fourteen years National Health Week has been in existence, many other "weeks" have been created by imaginative advertisers to sell their clients' wares. National Health Week is not a publicity stunt and stands alone in having nothing to sell to Canadians — except their own good health.

Health is of individual concern, and when each family takes care of its own health, that health is reflected in the well-being of the entire nation. For a telling example of this, note that last year, Canadian workers lost a total of 154,881 *years* of time through being absent from work through preventable illness.

A great deal of illness can be prevented. Through education, some of that vast fog of apathy and ignorance which clouds the vision and minds of the population can be dispelled, and a better life and higher standards created for all Canadians.

Last year, for the first time, Dental Health Day was incorporated into Na-

tional Health Week, occupying the Wednesday which falls in the middle of the Week. With the co-operation of the Canadian Dental Association, much extra publicity was gained.

Radio-spots, timed for use on that day, dealt with dental problems, and a story on the Canadian Dental Association went into the News Budget which goes to all daily and weekly newspapers, and the major radio and television stations in the country. Dentists were interviewed on the radio during Health Week as well.

This year, Dental Health Day will again be a part of National Health Week. The Health League of Canada is asking for the support of all physicians and dentists during National Health Week. In Toronto, physicians and dentists voluntarily give their services to speak in churches on the opening Sunday of Health Week, and to be interviewed on health problems over the air and on television.

Anything that dentists can do to help bring the importance of National Health Week to the attention of the public will aid in achieving the goal of the Health League — a higher standard of living for all Canadians.

THE ASSOCIATION

Average Incomes

The Department of National Revenue's "Green Book" of taxation statistics, released recently, shows that dentists have maintained their same relationship to other professional groups as pertained one year ago. A new category, however, Estates, has been included and this would appear to indicate that dentists have slipped to sixth place as earners. However in 1954 the average income of a Canadian Dentist was \$7,896.00, in 1953, \$7,485.00. The increase of \$658.00 between 1954 and 1955 is significantly greater than the \$411.00 of the previous year. Here is a partial list of what the *Financial Post* calls "The Big Earners."

	No.	Av. Income Av. Tax	
		\$	\$
Engineers & Architects	1,870	14,007	3,484
Lawyers, notaries	5,570	12,243	2,800
Doctors, surgeons	10,680	12,166	2,558
Accountants	2,930	9,315	1,741
Estates	4,520	8,909	601
Dentists	4,020	8,554	1,356
Investors	72,360	6,224	992
Other professions	7,210	5,411	704

Average annual income for Canada as a whole rose from \$3,433 in 1954 to \$3,535 in 1955.

Perhaps this is a good time to recall that 1957 is the fortieth anniversary of a piece of "temporary" legislation introduced as a wartime measure, to be withdrawn when hostilities ceased (1918). This is how the Income Tax came to this country — and stayed.

CDA Retirement Savings Plan

Probably the most significant action taken by the Executive Committee at its meeting November 25-26 was the adoption of the new Canadian Dental Association Retirement Savings Plan. Experts in this field submitted a written proposal and attended the meeting in an advisory capacity. Deliberations took up most of the first day of this meeting.

Letters have been sent to the complete membership of the CDA to announce the plan. A booklet containing complete details of the plan has also been mailed to all members, with application form, so that members may take immediate advantage of recent changes in the Income Tax Act concerning tax deductible contributions to approved retirement savings plans.

The Canadian Dental Association Retirement Savings Plan is a savings arrangement established by the Association, and designed especially for its members, as a supplement or alternative to the existing Canadian Dental Association Pension-Assurance Plan. The plan merits your early and careful consideration.

D.V.A. Fee Schedule

Another major item on the Executive Committee agenda was revision of the existing fee schedule of the Department of Veterans Affairs. Schedules representative of most of the provinces were collected and used as a basis for revision of the D.V.A. fee schedule. Representatives of the Executive Committee later conferred with Department officials in Ottawa.

Thorold Retains Fluoridation

The people of Thorold, Ontario, recently voted in favour of continuing fluoridation of their water supply. The vote was 1319 for, and 756 against continuance of the measure.

Vancouver Backs Fluoridation

On December 12th, 1957 voters in Vancouver, B.C., in a plebiscite on fluoridation voted 53,284 in favour and 42,135 opposed. Because other communities are involved with the water supply system it will be impossible to proceed until there is general agreement among the participating municipalities.

N.B.D.S. Appointment

Dr. E. D. Halford has assumed his position as the new Secretary-Registrar of the New Brunswick Dental Society, located at 459 DeMont Street, Lancaster, N.B.

In The News

Dr. Frank Martin of Toronto, chairman of the Publications Committee of the C.D.A., at the annual meeting of the International College of Dentists was elected president of the College-at-large. It has been several years since a Canadian has been elected to this post.

Building Progress Reports

Dalhousie:— Dental students enrolled at Dalhousie University expected to move into their new quarters over the Christmas holidays, according to latest word from Dean J. D. McLean.

The building, designed by the Halifax firm of J. Philip Dumaresq and Associates, is expected to provide facilities to double the number of students partaking of the dental classes. Outside work on the structure is almost completed. The new building will house two pre-clinical laboratories, smaller labs., a main clinic and four operation rooms for demonstration and other purposes along with many other facilities not available in the present quarters.

Dean McLean estimates that new technical equipment for the building will cost approximately \$200,000 and that student enrollment will be increased to 24 or 25 students per class in comparison of the 12 or 13 enrolled in each of the four years now attending the Dalhousie Dental faculty.

The new facilities, which has a three-storey front wing in addition to the two-storey general sections of the structure, is expected to provide facilities which will equal any in Canada for undergraduate work.

Toronto:— Last minute details are almost complete for the new dentistry build-

ing at the University of Toronto. Demolition of old buildings on the site of the new building has been completed. The University has called for tenders on construction of the new building.

Alberta:— The following report paraphrases part of letter from Dean Hamilton to the C.D.A. Secretary.

"The following is from the report of our President, Dr. A. Stewart, to Fall Convocation, November 2nd, 1957.

'It is therefore gratifying that the government of the Province has given us assurance of support for a program of construction which will provide for expansion of the science departments. An extension to the Medical Building, which will accommodate the Schools of Nursing and Physiotherapy now in temporary space, and which will provide for expansion in the pre-clinical departments in the Faculty of Medicine, in Pharmacy and in Dentistry, will be commenced as soon as detailed plans are completed'

"More specifically the Medical Building is going to be completed The space allotted to Dentistry is about 45,000 sq. ft. The present clinic and laboratories will disappear, and an entirely new plan will be adopted. It therefore is essentially new construction."

Blue Cross in Ontario

Detailed changes concerning Blue Cross coverage will no doubt be received in the future, but we reprint here part of a preliminary message from the Executive Secretary-Treasurer of the Ontario Hospital Association:—

"When the Ontario Hospital Services Commission launches its hospital insurance plan on January 1, 1959, Blue Cross will offer a form of semi-private coverage which was specifically designed to supplement the basic (standard ward) coverage which will be made available by the Commission. This means that Blue Cross semi-private subscribers will be able to continue similar protection to that which they have enjoyed over the years.

"The new plan is so constructed that it will not overlap or cause duplication of any benefits provided under the Commission's insurance scheme."

THE PROVINCES

ALBERTA

Edmonton and District Dental Society

The Annual Ladies' Night of the Edmonton and District Dental Society was held in the beautiful and spacious Mayfair Golf and Country Club, October 18th. The social convenor Dr. S. B. Gerolamy and his committee are to be congratulated on the arrangements for the dance, the smorgasbord supper and the floor show. Guests of the society were the Hon. Dr. J. Donovan Ross, Minister of Health for Alberta; Ald. G. Mitchell, City of Edmonton; Dr. E. B. Quhel, Edmonton Academy of Medicine.

The regular November meeting of the society featured a clinic on "Rubber Base Material in Restorative Dentistry" by Dr. G. Brass. He illustrated his lecture with coloured slides. Dr. D. R. Stewart assisted Dr. Brass by a brief demonstration of tissue retraction using string impregnated with alum and a further piece soaked in racemic epinephrine to pack back the gingiva before the impression is taken. Dr. J. L. Little demonstrated different kinds of simple trays for impression taking easily made by the operator. Dr. J. Diepenheim showed how the impression could be silver plated for special dies for porcelain jacket or inlay preparations.

Two new members, Dr. R. Mullen, Edmonton, and Dr. D. Classen, Leduc, were admitted to the society making the total paid membership 120.

G.C.

BRITISH COLUMBIA

Victoria and District Dental Society

The regular monthly meeting of the Victoria and District Dental Society was held on November 18. Thirty-five members and guests gathered at the Empress Hotel to hear Dr. Joe Merrell of Vancouver, discourse on some basic fundamentals of endodontics. The talk included means of access to all types of root canals, multiple cone filling technique and case histories of all conditions confronting the general practitioner in retaining the pulpless tooth.

The speaker, who was introduced by Dr. W. W. McLuhan, delivered an interesting lecture outlining all procedures in endodontics, including tray set-ups, methods of isolation and sterilization, root reaming and filling, apicoectomy and vital pulpotomy, all adequately illustrated by slides. Dr. Roy A. Johnson suitably expressed the society's thanks.

Vancouver and District Dental Society

The usual enthusiastic throng were in attendance when Dr. Sanford M. Moose of San Francisco gave two illustrated lectures on aspects of oral surgery. In the afternoon he outlined the intricacies of "Osteoperiosteal Flap for Operation on Large Tumors and Cysts of the Jaw" and "An Intra-oral Surgical Procedure for Bisecting the Ascending Ramus in Selected Cases for Correction of a Mandibular Prognathism."

To provide relaxation before the evening meeting, the visual education chairman, Dr. W. G. Denovan, showed a coloured movie entitled "The 1956 Grey Cup".

The society stood in silence as a tribute to the memory of Dr. Hugh MacCrostie, whose death occurred on November 27.

The lecturer was then presented by Dr. Keith Lindsay. Dr. Moose gave a lengthy and scholarly address on "Conservative Consideration of the Tempero-Mandibular Joint". The evening came to a close when Dr. Bill Elliott complimented the speaker on the day's presentations.

D.H.M.

MANITOBA

Winnipeg Dental Society

The second clinical meeting of the Winnipeg Dental Society was held on November 18th and featured four local medical specialists. This type of program has become one of the highlights of our clinical year in that it reminds us forcefully that the oral cavity is only part of a complex anatomical structure and the success or failure of our efforts within this oral region, very often depends on what is going on throughout the rest of the body.

The first speaker was Dr. L. O. Bradley, the Administrator of the Winnipeg General Hospital. Dr. Bradley has had country-wide experience in the administration side of hospital work and he has developed definite ideas on the place the dental profession should assume in hospital affairs. He outlined the advantages to the patient and to the dentist when more treatment is rendered under the ideal conditions of a hospital operating room. He also spoke of responsibilities and difficulties that would be encountered if the dentist wanted to take an equal position with the medical staff, but he felt these could all be over-

come with a little co-operation between the professions.

Dr. James Passalis thanked Dr. Bradley on behalf of the Society.

The next speaker was Dr. D. Sanger McEwan, the Chief of Staff and Head of the Department of Medicine, St. Boniface Hospital. Dr. McEwan specializes in Internal Medicine and Respiratory Diseases and he discussed these fields in their relationship to dentistry. This discussion included the removal of foreign bodies from the oesophagus and the lungs, internal allergic reactions to drugs and medications, and the control of bleeding.

Dr. Donald Proctor thanked the speaker at the conclusion of his talk.

The Winnipeg Society was especially pleased and honoured to have as its guest speaker at the noon luncheon, Dr. John Neilson, the newly appointed Dean of the Dental School. Dr. Neilson had just arrived the week or so previous, to take up permanent residence in Winnipeg and this was his first official appearance before the local Society. Dr. Neilson spoke of the challenge and the difficulties that go with the establishing of a new school and urged every member of the profession to co-operate in every way possible in order to make the Manitoba school one of the best. He in turn pledged himself to do everything in his power to promote good-will and understanding between the school and the private practitioner.

Dr. Neilson's sincerity and desire impressed his audience, and they in turn showed their confidence in his ability to master his difficult task by giving him a resounding ovation at the completion of his report.

The Society business meeting was held following the luncheon and included the following:

- (1) Dr. McCormick, the head of the School Dental Services, reported on the school-hour dental appointment problem.
- (2) The Group Sickness and Accident Plan was discussed.
- (3) The Golf and Curling Committees gave reports.
- (4) Congratulations were made to Dr. I. Wolch who was recently elected to Council as a School Board member.

Following the luncheon, our first speaker was Dr. J. C. Pincock, the Director of the Department of Physical Medicine at the Deer Lodge Veteran's Hospital, who spoke on "The differential diagnosis of face pain". Dr. Pincock felt that too often a diagnosis of psychogenic pain was made, whereas with a bit of work and study of the patient a rational cause could be traced and found. He illustrated this with case histories from his own experience and on consultation with dentists.

Dr. P. Goldberg thanked the speaker for the extremely interesting way he had presented this difficult subject.

The final presentation for the day was a discussion of the treatment of Cleft Palate patients. Dr. N. Merkeley, who specializes in plastic surgery told of the newer methods of surgical treatment, and illustrated these with slides. Miss C. Richards, a member of the Speech Therapy Department of the Children's Hospital, followed with a demonstration of how they plan out what corrections are necessary and then the exercises and treatments necessary to rehabilitate these patients. Our own Dr. Howard Merkeley concluded the discussion by showing the new technique he had evolved to facilitate the making of prosthetic appliances for this type of patient and he showed an excellent moving picture of the anatomical problems involved and how they can be overcome in a relatively easy step-by-step procedure.

Dr. Gordon Campbell expressed the Society's thanks to this panel of speakers.

J.P.B.

NEW BRUNSWICK

New Brunswick Dental Society

After 15 years of service to the New Brunswick Dental Society in the capacity of secretary-treasurer and registrar, Dr. S. K. Wetmore, Saint John, was elected president at a recent meeting in the Lord Beaverbrook hotel.

Other officers elected are: vice-president, Dr. Donald C. Steeves, Moncton; secretary-treasurer and registrar, Dr. E. D. Halford, Saint John. Dr. R. H. Dolan, Fredericton, was chosen council member of the Fredericton area.

Other area members of the Council are: Saint John, Dr. G. L. Ramsay; Moncton, Dr. Paul E. Cormier; Dalhousie, Dr. J. S. Vatour; Edmundston, Dr. Yvon Long. Additional council members are: Dr. Monica Mooney, Dr. H. F. Bonnell, Saint John; Dr. S. C. Geddes, Moncton; Dr. W. A. Sinclair, St. Stephen; Dr. C. A. Hayward, Chatham.

Dr. H. B. Flemming, Moncton, was named representative to the Canadian Dental Association, with Dr. W. Blake O'Brien, Fredericton, as alternate. Dr. George A. Cormier, Moncton, was named to the national dental examining board and Dr. James O'Brien, Saint John, his alternate.

Dr. Donald Somerville, Bristol, retiring president, chaired the business session which began in the morning and continued through the afternoon. The lunch hour was devoted to technical discussions.

Matters of dental health, oral hygiene and the Ontario hospital insurance plan which may become a pattern for New Brunswick, were discussed.

The society renewed its approval of the principle of fluoridation of communal water supplies as a prevention of tooth decay. A formal resolution re-stating the society's position will be presented to the minister of health Dr. J. P. McInerney.

Dr. A. G. Racey, Montreal, president of the Canadian Dental Association had been scheduled to speak at the annual luncheon, but all air-flights out of Montreal were cancelled.

Arrangements for the social side of the convention were made by a committee of the Fredericton Dental Society.

The dentist and public relations came in for a discussion which was led off by an address on Public Relations for the Dental Profession by Dr. Monica Mooney, Saint John, who had with her, samples of literature and posters available to dentists. The best type of public relations, she said, was to impress the public with the importance of preventive dentistry.

Speaker at the luncheon was Dr. R. S. Langstroth, dental health officer of the Provincial Department of Health and Social Services.

New Brunswick Dental Society

The sixty-second annual meeting of the New Brunswick Dental Society was held in Fredericton on the 2nd November, 1957. There were forty dentists in attendance and considering there are approximately one hundred actively practising members in the province, this would make about forty per cent who were in attendance. The president Dr. D. A. Somerville was in the chair and he welcomed everyone but regretted, due to bad flying weather, that Dr. Gerald Racey, president of C.D.A. was not able to attend. He further stated there were four new dentists registered in New Brunswick during the year. The president in his address made many constructive suggestions, among which was a strong recommendation that the New Brunswick government be again urged to pass necessary permissive legislation to allow communities in the province that so wished, to have their communal water supplies fluoridated. At present the New Brunswick Supreme Court holds that it is illegal to add fluoride in any form to communal water supplies in this province.

All committees gave reports with the usual discussions and adoptions. It was noted that in the Legal Committee's Report, one technician, with an injunction against him by the Supreme Court, had violated the injunction and had been sentenced to seven days in jail. The Public Relations Committee has been revitalized and an excellent report of the year's activities was made. A

budget of up to two hundred dollars was passed for use next year in connection with Dental Health Day.

As the bank balance has been growing over the years, it was recommended that a non-working portion be placed into bonds so that a more favourable interest rate might be acquired. A notice of motion in the change of the by-laws was given to change the honorary membership age to be effective at age sixty-five instead of seventy years as at present. The Cancer Committee reported that one member had gone to New York for a ten day post graduate study at the Memorial Hospital. The report from the committee conducting the Maritime Dental Association meeting at Moncton in June reported a profit after all expenses were paid. This was an excellent meeting and congratulations were given to the committee on their success.

The following is a list of new officers of the New Brunswick Dental Society:

President, Dr. S. K. Wetmore, Saint John; Vice-President, Dr. D. C. Steeves, Moncton; Secretary-Treasurer-Registrar, Dr. E. D. Halford, Saint John.

Council members are: Drs. G. L. Ramsay, Saint John; Monica Mooney, Saint John; H. F. Bonnell, Saint John; P. E. Cormier, Moncton; S. C. Geddes, Moncton; W. A. Sinclair, St. Stephen; C. A. Hayward, Chatham; R. H. Dolan, Fredericton; Yvon Long, Edmundston; J. D. Vautour, Dalhousie. C.D.A. Representative, Dr. H. B. Flemming, Moncton; N.D.E.B. Representative, Dr. Geo. A. Cormier, Moncton.

After the meeting a very enjoyable Dinner-Dance was held at the Kent Inn in Fredericton to which the ladies were invited. It was a very convivial social gathering and great credit was given to the Fredericton Committee who made all the local arrangements. In addition an afternoon tea party was given at the home of Mrs. Blake O'Brien in honour of the visiting ladies.

J.F.E.

ONTARIO

Brockville Dental Society

Dr. R. E. McBroom was elected president of the Brockville Dental Society at a recent meeting held at the home of Dr. C. D. Goodison, retiring president.

Others elected to office were: Dr. F. J. Phillips, vice-president, and Dr. C. Owen McDougall, secretary.

Guest speaker on this occasion was Dr. D. Hutt of Kingston, whose topic was "Orthodontics for the General Practitioner and Cleft Palate Management".

Plans were discussed for clinics early this spring.

The Niagara Peninsula Dental Association

The third regular meeting of the Niagara Peninsula Dental Association was held on Friday, December 7th at Leo's Restaurant in Fort Erie. There were 58 members in attendance. This was the Annual Home Brew and Turkey Draw night.

The clinician was Dr. Aubrey Crich who spoke on "X-Rays in Surgery".

QUEBEC

Teacher Training Conference

On Thursday and Friday, November 7th and 8th, 1957, a "Teacher Training Conference" was held jointly by the Faculties of Dentistry of McGill University and the University of Montreal.

On November 7th the conference met in the Amphitheatre of the Montreal General Hospital.

Dean James McCutcheon, Faculty of

Dentistry, McGill University, gave the opening address and introduced the speakers for the morning, Prof. David Munroe, Director, Department of Education, McGill University and Father Mailloux, Director, Department of Psychology, University of Montreal.

The topic for the morning session was "What is Good Teaching?"

Following the presentation of two excellent papers the conference was divided into four discussion groups, with the object of discussing the above topic with special application to the problems of teaching dentistry.

The groups then returned to the amphitheatre to present their questions to a panel consisting of Chairman, Dean A. G. Lewis, Ontario College of Education, Dr. F. Cyril James, Principal, McGill University, Dr. Yvon Blanchard, Director of Admissions, University of Montreal, Prof. David Munroe, and Father Mailloux.

Each of the four half-day sessions fol-



Group attending two day teaching conference at McGill University and the University of Montreal, November 7th and 8th, 1957.

lowed the same pattern.

On Thursday afternoon the speakers were: Prof. C. Wayne Hall, School for Teachers, Macdonald College, Prof. Rene Paquette, Professor of Science, Louis Hebert Secondary Schools.

Their topic was "Methods of Teaching".

The Panel consisted of: Chairman, Dean A. C. Lewis, Dr. Leon Lortie, Director, Extension de l'Enseignement, University of Montreal. Prof. Kenneth Hare, Chairman, Department of Geography, McGill University, Prof. C. Wayne Hall.

On Friday the conference was held in the Commencement Hall, University of Montreal.

Dr. Jean Paul Lussier, Vice-Dean, Faculty of Dentistry, welcomed the conference to the University of Montreal and introduced the speakers for the morning, Dr. C. E. Smith, Professor of Education, McGill University. Dr. Smith presented a paper entitled "Evaluation of Teaching".

Prof. J. St. Pierre, Professor of Mathematics, University of Montreal, was unable to attend the conference due to illness. In his absence, his paper "Some Thoughts Concerning the Grading of Papers", was presented by Dr. C. E. Smith.

The panel consisted of: Chairman Dean A.C. Lewis, Dr. Abel Gauthier, Vice-Dean and Director of Studies, Faculty of Sciences, University of Montreal, Prof. David Munroe and Dr. C. E. Smith.

The Friday afternoon speakers were: Dr. Lloyd G. Stevenson, Dean, Faculty of Medicine, McGill University, and Dr. Jean Paul Lussier, who presented papers on the "Administration of a Professional Program".

The panel consisted of: Chairman, Dean A. C. Lewis, Dean H. N. Fieldhouse, Faculty of Arts & Science, McGill University, Dr. Roger Dufresne, Vice-Dean, Faculty of Medicine, University of Montreal, Dr. Lloyd G. Stevenson, and Dr. Jean Paul Lussier.

The conference was considered to be very successful by all who attended. The material presented by the speakers pertained to teaching in general, and was somewhat difficult to apply to the teaching of dentistry, where it is necessary to teach manual skills in addition to theory. It was generally conceded, however, that there was enough "common ground" to make the conference very helpful. It was not intended that the one conference should solve all the problems of dental teaching but rather, that it would stimulate constructive thought. This, together with future conferences might aid in raising the standards of teaching in dentistry.

H.J.S.

Montrealers Awarded A.C.D. Fellowships

Three prominent Montreal dentists were honoured recently in Miami, Florida where they received Fellowships in the American College of Dentistry, in recognition and appreciation of their contributions to the profession. Dr. J. C. McCutcheon, Dr. W. C. Bushell, and Dr. L. J. Rosen were the honoured men, and after reading a brief history of their dental accomplishments, we can certainly understand why they have merited this great honour.

Dr. J. C. McCutcheon—Born in Elizabeth, N.J. in 1920, and matriculated from Stanstead Wesleyan College, Stanstead P.Q. Received a B.A. from McGill in 1942 and in 1945 graduated as Gold Medalist in the Faculty of Dentistry, McGill University. Received his M.S.D. degree in Prosthetic Dentistry from the University of Michigan in 1948. Also in 1948 Dr. McCutcheon was appointed Associate Professor of Prosthetic Dentistry at McGill University. In 1955 he succeeded Dr. D. P. Mowry as Dean of the Faculty of Dentistry, McGill University.

Dr. McCutcheon is a member of the Canadian Dental Association; a member of the Montreal Dental Club, and past member of the executive; a member of the board of Governors of the College of Dental Surgeons of the Province of Quebec, an Honorary Member of the Montreal Endodontia Society; member of the American Denture Society; Honorary Member of the American Society of Dental Medicine; member of the Medical Board of the Montreal General Hospital, member of the Child Health Association of Montreal, member of the Board of Health, City of Montreal; and now a Fellow in the American College of Dentists.

Dr. W. C. Bushell—Born in Westmount at the turn of the century; he received his early education at Westmount Public School. After service in the Royal Canadian Air Force, he went to MacDonald College in 1919 and transferred to Dentistry in 1920, graduating from McGill in 1924 as Gold Medallist. The same year he joined the staff of McGill University, and in 1928 he was appointed lecturer in the department of Crown and Bridge. In 1930 he became an Associate Professor in the department of Prosthetics, as head of the crown and bridge department. In 1935 Dr. Bushell was made an Honorary Member of the American Dental Society of Europe after giving clinics in London, England. In 1951 he was elected to membership in the American Academy of Restorative Dentistry. In 1953 he received his Fellowship in the International College of Dentists, and in 1957 his Fellowship in the American College of Dentistry.

Dr. Louis J. Rosen—Born in Montreal, also at the turn of the century. Graduated from the High School of Montreal in 1917. In 1918 entered the Faculty of Dentistry at McGill from whence he graduated in 1922. Since then Dr. Rosen has been extremely active in the Dental field giving clinics and lectures from Montreal to Glasgow, Scotland. Since 1945 most of his practice has been limited to endodontics. Dr. Rosen is a past President of the Mount Royal Dental Society; past President and Charter member of the Montreal Endodontia Society; a member of the American Society of Endodontists; and an associate member of the Chicago Dental Society, a member of the American Academy of Dental Medicine, former Governor of the College of Dental Surgeons of the Province of Quebec; a lecturer in the department of Endodontics at McGill University since 1946; a member of the Canadian Dental Association; past

President of the Montreal Section of the American Academy of Dental Medicine; and now a Fellow in the American College of Dentists.

A.J.S.

Montreal Dental Club

On Friday, November 15th, a Formal Dinner was held at the Windsor Hotel, by the Montreal Dental Club, at which the Club chose to honour a few of its senior members, both for their contribution to Dentistry and to the Club itself.

Those so chosen for this presentation included Doctors J. Dohan, A. D. Angus, A. W. McClelland, O. A. Lefebvre, D. D. McDonald, and F. G. Henry. Also presented for Honorary Membership in the Club was Dr. Gordon Kelly, a Past President.

Dr. E. T. Cleveland, as President of the Montreal Dental Club, acted as chairman and introduced the speakers.



MONTREAL DENTISTS HONOURED

Back row, l to r: Dr. F. G. Henry; Dr. E. T. Cleveland, President, Montreal Dental Club; Dr. O. A. Lefebvre; Dr. D. D. MacDonald. Front row, l to r: Dr. A. D. Angus; Dr. J. D. Dohan; Dr. A. W. McLelland.

The occasion was highlighted by reminiscences of dental techniques and problems, and general historical anecdotes of dentistry as practised in the early days of the honoured guests as well as the early beginnings of the Montreal Dental Club. It was indeed stimulating to those present to note how much progress has been made in Dentistry since those days and to the contribution these members have made to the profession and the Montreal Dental Club.

Dr. Owen Frederick, in charge of the Dinner, ensured that all those attending had an enjoyable evening.

R.A.L.

Mount Royal Dental Society

The first all-day clinic of the Mount Royal Dental Society took place on November 15th, 1957.

The clinician, Dr. John Metz, of Springfield, Mass. presented the Swissedenture technique. In this technique each denture is designed to meet the patient's individual physical personality, age and sex, and the teeth employed are chosen accordingly e.g. softly curved teeth for a woman as against more square or cuboidal teeth for a man. These can, furthermore, be varied in shape, size, position and shade to comply with a personality spectrum ranging from vigorous to delicate. Additional character is also imparted by the shaping and shading of the matrix which invests each tooth. The result is referred to as a dentogenic restoration. Dr. Metz showed various methods of obtaining the desired characteristics and proceeded during the afternoon session to demonstrate the practical aspects of the technique by selecting teeth and doing a trial set-up for a patient. The results were quite convincing that this technique represents a new departure which has definite merits. A discussion period followed.

C.G.B.

McGill Dental Staff-Student Dinner

On Wednesday evening, December 4th, the McGill Dental Undergraduate Society re-inaugurated the McGill Dental Staff-Student dinner, which was held at the Berkeley Hotel in Montreal. Among the guests of honour were Dr. James McCutcheon, Dean of the Faculty of Dentistry, McGill University; Dr. M. Rogers, Clinical Director, McGill University and Dr. W. C. Bushell the guest speaker who gave a most enlightening and humorous talk on Investments.

Congratulations are certainly in order to the Dental Undergraduate Society, who undertook to renew this evening of good cheer.

Leslie Cup Won by Dentists

The "Leslie Cup" awarded each year by Red Feather to the section in the Professional and Public Service division showing the highest percentage of objective was this year presented to the Dental Group under the chairmanship of Dr. Howard T. Oliver. Last year this award was won by the Medical group under the chairmanship of Dr. C. Gardner. Certainly the Dental group is quite pleased at having won the Leslie Cup, which is a tribute to the generosity of its members.

H.T.O.

Montreal Orthodontic Society

The Montreal Society of Orthodontists held their regular dinner meeting at the Berkeley Hotel on November 25th. The President Dr. G. Kelly extended congratulations to Dr. Paul Geoffrion on his new position as Dean of the Faculty of Dentistry at the University of Montreal. Dr. H. Levitt and Dr. C. Solomon then presented interesting case reports which were followed by a short film. Dr. A. Colle thanked the speakers on behalf of the members.

H.T.O.

THE AMERICAN INSTITUTE OF DENTAL MEDICINE CASE HISTORY SERVICE

The Institute continues to offer Case Histories from the broad field of Dental Medicine for the year 1957-58. These will include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory findings, medical background, roentgenograms, photomicrographs, diagnostic criteria and whatever else may be indicated in each individual case, with a "general discussion" of the disease. A loose leaf binder and matching Kodachrome slide box will be furnished to each participant. The fiscal year of the Institute runs from October 1 to September 30.

This monthly service began October 1952 and has met with outstanding success. During these five years it has provided a total of 810 one-year subscriptions and the Histories were accompanied by 121 Kodachrome slides.

Anyone subscribing to this CASE HISTORY SERVICE is entitled to full membership in THE AMERICAN INSTITUTE OF DENTAL MEDICINE. Members of the A.D.A. or A.M.A., or their foreign equivalent, are eligible to apply. Due to the great demand for this Service, it is recommended to subscribe at an early date for immediate delivery.

For further information, address all communications to the Secretary,
MRS. C. NOVEMBRI, 2240 CHANNING WAY, BERKELEY 4, CALIFORNIA.

THE CORPS

Brigadier E. M. Wansbrough, was presented with a Certificate of Honorary Life Membership in the Royal Canadian Dental Corps Association "in recognition of his distinguished services to the Corps, the Association and to the dental profession." The presentation was made by Lt.-Col. J. E. Merritt of Halifax, Chairman at the Annual Association Dinner.

Lt.-Col. T. L. Marsh has been re-elected by the General Assembly of the Federation Dentaire Nationale as a co-opted member of the Armed Forces Dental Services Commission.

The following officers, accompanied by their families have returned to Canada from a tour of duty with the Canadian Brigade in Germany. They are now employed at the locations shown:

Lt.-Col. O. W. Crummey, Griesbach, Alta.; Major C. G. B. Grant, Halifax, N.S.; Major R. E. Brown, H.M.C.S. Naden, Esquimalt B.C.; Major E. J. C. Small, Oakville, Ont.; Capt. R. C. Darling, Camp Borden, Ont.; Capt. J. McGaughey, Halifax, N.S.

The following officers with their families are now located with the Canadian Brigade in Germany:

Lt.-Col. R. H. G. Cunningham, A.F.H.G. Clinic, Ottawa, Ont.; Major W. H. Murray, H.M.C.S. Shearwater, Dartmouth, N.S.; Capt. L. Dombowsky, Korea; Capt. J. B. Scott, R.C.A.F. Stn., Goose Bay, Labrador.

Lt.-Col. W. R. Cunningham of Camp Borden, Ont., attended a refresher course in Oral Surgery at the University of Michigan.

The following is an extract from the Editorial page of the Halifax Mail-Star:

The Best In Canada

"A lift to the morale of any military force is the knowledge that it has an effi-

cient contingent of support units. For troops in the Halifax area there is a little something extra. They have been told that the local militia group of the Royal Canadian Dental Corps is the best in Canada.

"Awarding of the Moore Trophy to 50 Dental Unit R.C.D.C. (M) is an outstanding tribute to the training and field work of its Officer Commanding, Lieutenant-Colonel F. C. Fennell and his staff. Even more gratifying is the fact that this branch of the corps is consistently skilled, having won the award in 1954 and last year being the recipient of the Trelford Trophy, emblematic of second place in the national competition.

"The Royal Canadian Dental Corps is one of the unsung heroes of Canada's army. It has kept in step with the general modernization by adopting portable equipment, attaching outstanding dentists and technicians to its ranks, and by taking its clinics to the troops, even to the front lines in time of war. The corps rendered outstanding service during the Second World War and the Korean conflict safeguarding the dental health of men of the army, navy and air force.

"The peace time buildup of a Canadian militia has been bolstered by formation of efficient support units such as dental, medical, army service, pay, provost, engineer and ordnance corps without which the infantry and artillery could not operate.

"Nova Scotians are proud of the contribution reserve personnel from this province are making to the new militia. It is significant that the major honors in Atlantic Command Summer Exercises at Camp Gagetown and Camp Utopia have been won by local regiments. The honour brought to the command by 50 Dental Unit illustrates that east coast soldiers are also setting high standards farther afield."

R.C.D.C. Association

The 10th Annual Meeting of the Royal Canadian Dental Corps Association was held in Ottawa on November 1st and 2nd 1957. Delegates included officers of the Command Militia Dental Advisory Staffs and of all Militia Dental Units. The Directorate of Dental Services was represented by Brigadier E. M. Wansbrough and Colonel K. M. Baird.

One of the major topics under discussion concerned the recently-announced policy on training of the Militia for Civil Defence assistance. The Association unanimously adopted a Resolution declaring its endorsement and support of the Canadian Dental Association's Statement of Policy on Civil Defence.

Guests-of-Honour at the Annual Dinner

were Colonel Dwight Coons, Colonel Lorne Janes and Major Hec. Thompson, three of the founding members of the R.C.D.C. Association. During the Dinner, the Director-General, Brigadier Wansbrough, presented the Trophies awarded annually to the units winning the R.C.D.C. (M) General Efficiency Competition; the Moore Trophy was awarded to No. 50 DU, Halifax, the Trelford Trophy awarded to the runner-up unit, was won by No. 54 DU, Ottawa, and the Saskatchewan Memorial Trophy awarded to the unit making the greatest progress during the training season, was won by No. 60 DU, Edmonton.

Elected to Honorary Life Membership in the R.C.D.C. Association were Brigadier E. M. Wansbrough, Director-General Dental Services, and Dr. John S. Stewart of Lethbridge, Alta. Dr. Stewart, still in active practice at the age of eighty years, and who

commanded the 3rd Canadian Division Artillery during World War I, with the rank of Brigadier-General, has had a long and distinguished record, both as soldier and citizen.

The Executive of the Royal Canadian Dental Corps Association for 1958 are:

Past President—Lt.-Col. J. E. Merritt, Halifax.

President, Col. D. W. Henry, Montreal, P.Q.

President-elect— Lt.-Col. J. L. Warriner, Winnipeg, Man.

1st Vice-President— Lt.-Col. N. L. Simon, Hamilton, Ont.

2nd Vice-President—Lt.-Col. G. E. Decker, Edmonton, Alta.

Secretary—Col. C. B. Climo, 75 Avenue Rd., Ottawa Ont.

Treasurer—Col. Hugh R. McLaren, 365 Avondale Ave., Ottawa, Ont.

GENERAL NEWS

A.D.A. Elects President

Dr. W. R. Alstadt, of Little Rock, Ark., was installed as the new president of the American Dental Association at the close of its 98th annual session in Miami and Miami Beach Fla., on Nov. 7. Dr. Alstadt, an orthodontist, succeeded Dr. Harry Lyons, of Richmond, Va. Dr. Percy T. Phillips, of New York City, a general practitioner, was named as the new president-elect by acclamation of the 416 members of the House of Delegates. Dr. Gerald D. Timmons of Philadelphia, Dean, Temple University School of Dentistry, was unanimously re-elected Speaker of the House of Delegates. Attendance at the meeting was 11,131, including 5,733 dentists.

Dr. Arthur W. Kellner, of Hollywood, Fla. was elected first vice-president, succeeding Dr. Eugene R. Westcott, of Atlantic City, N.J. Dr. J. Murray Gavel of Boston, was elected second vice-president, succeeding Dr. Harold E. Cafferata, of Reno, Nev., and Dr. B. F. Wilkinson, of Tyler, Tex., was elected as third vice-president, succeeding Dr. John W. Knutson, of Washington, D.C. Dr. Lon W. Morrey, of Chicago, and Dr. H. B. Washburn, of St. Paul, Minn. were reappointed to one year terms as editor and treasurer, respectively.

A.D.A. Policy on Dental X-rays

Further reassurances to dental patients that there is no justification for concern about routine dental X-ray examinations was provided by the A.D.A. Council on Dental Research at its meeting in Washington, D.C., Nov. 21-22. The council, headed by Dr. Thomas J. Hill of Brecksville Ohio, reaffirmed its earlier statement of policy regarding dental X-rays. The report said:

The Council on Dental Research of the American Dental Association reaffirms its belief that there is not justification for undue concern by patients undergoing x-ray examinations of the teeth and jaws.

X-ray examinations are an essential aid in dental care.

The curtailment of such examination in oral health service would handicap the patient and impair proper diagnosis and treatment planning. Millions of x-ray examinations have been made by dentists without a report of injury to a patient. Recent research has shown that x-ray examinations of the teeth can now be made with even less radiation when the x-ray beam is properly filtered, centered with a lead diaphragm, and when super speed film, increased kilovoltage and longer developing time are used.



Dentists attending the recent Physicians and Dentists' Course at the Canadian Civil Defence College, Arnprior, witnessed a casualty simulation exercise presented by the College staff. Seen here examining Advance Treatment Centre equipment are, l to r: Doctors, C. W. McCrary, (Lt. Col. Headquarters, Quebec Command); C. M. Cornish, (Lt. Col., D.N.D., Ottawa); G. E. Williamson, Burlington, Ontario; C. J. Kennedy, Ingersoll, Ontario; A. E. Chegwin, Regina, Saskatchewan; and J. M. Smith, (Major) Cornwallis, Nova Scotia.

Physicians' and Dentists' Indoctrination Course

Physicians and Dentists from all parts of Canada recently completed an intensive week of discussion and study on Canadian Civil Defence medical problems. The course, with 65 in attendance, was held from 25-29 November at the Canadian Civil Defence College, Arnprior, Ontario.

Guest speakers, assisted by College staff, presented such subjects as: Characteristics of atomic weapons; Target effects and damage criteria; Principles of biological warfare; Epidemiological problems in biological warfare; Radiation hazards from atomic weapons; Radioactive contamination of water, food and clothing; Health services organization and casualty services; Role of the Dentist in Civil Defence; Role of the Armed Services in Civil Defence; Emergency blood services; Medical supplies for Civil Defence; Thermal injuries in atomic warfare; Anaesthesia and Analgesia in mass casualty management; Psychological and Psychiatric phenomena in catastrophe; Ocular injuries and Hospital disaster planning.

A Casualty Simulation demonstration utilizing a basic Advance Treatment Centre

was produced for the members of the course. Make-up of the simulated casualties was done by casualty simulation students also on course during this period.

In addition to panel discussions, films and papers on the medical aspects of Civil Defence, present trends in nuclear warfare were studied in syndicate group meetings. Upon completion of this, the sixth course conducted by members of the Civil Defence Health Services of the Department of National Health and Welfare over 500 Canadian Physicians and Dentists now have received detailed knowledge of the progress and plans of Civil Defence for war time and national emergencies.

Americans Spend ¼ Billion on Oral Hygiene Products

A recent survey of consumer expenditures on products sold in drug stores has revealed some interesting figures. Americans, in 1956 spent \$155 million on dentifrices, \$15 million on denture cleaners and adhesives, and \$94 million on other oral hygiene products such as tooth-brushes, mouth washes and gargles. The total showed an increase of more than \$11 million

over the previous year, and nearly \$23 million over 1954. Many millions of dollars were spent on dentifrice advertising as well.

By taking 10 per cent of these figures you may arrive at an approximation of the amounts spent by Canadians.

Facts on Fluoridation

The recently revised edition of "Facts on Fluoridation" is off the press and ready for distribution. Single copies will be supplied on request. Quantities will be supplied at 25 cents per copy.

IN MEMORIAM

Milton Taylor Armstrong — Dr. Milton Taylor Armstrong died on November 11th, following an illness of several weeks duration.

Dr. Armstrong was born at McKellar, Ontario. He moved to Parry Sound at an early age and there received his early education. He graduated from the University of Toronto in 1911 and practised in Parry Sound, in the same building for 43 years.

In 1929 he founded the Parry Sound Golf and Country Club and was elected president of the club, and continued in that position for about 20 years when he resigned. He was formerly on the Parry Sound Utility Commission; Past President of the Parry Sound Granite Curling Club; Past Master of the Granite Masonic Lodge, and also a member of the Barrie Masonic Lodge of Perfection.

In 1933 he ran as Liberal Candidate for the Provincial House. He was elected in the 1934 election, and served as member for the District for twelve years. During his twelve years in parliament he was chairman of the Library Board of the Parliament Buildings and was one of the parliamentary whips.

He was called to Ottawa and asked to leave the Provincial Field to be the Federal Candidate, but with large personal loss to himself he refused, because he believed he could do more for the people in his District in the Provincial Field. During his tenure of office under his personal direction: He secured the Highway Office for his own District, since then it has been moved back to Huntsville; the roads were first snow plowed; he had the Parry Sound-Sudbury Road surveyed the whole distance and built the road as far as Britt; he established and built the Public Parks system in the Dis-

trict. His pride was "The Armstrong Park" at Oastler's Lake, which has since been re-named.

He was an ardent Liberal and won every Provincial convention of the Liberal Party for 25 years, and was given the title of "Mr. Liberal of the District of Parry Sound."

Dr. Armstrong's hobby was building. He built many cottages and built and owned four of the finest residences in the town of Parry Sound. He loved the outdoor life—fishing, hunting and exploring; above all he loved people and was most happy when he was doing something to help them.

Hugh MacCrostie—Dr. Hugh MacCrostie, aged 66, of Vancouver, B.C., died on November 27 in Shaughnessy Hospital after a lingering illness of over a year.

Dr. MacCrostie was born in Lucknow, Ontario and graduated from the R.C.D.S. in 1920. He practised in Edmonton for several years, and came to the Coast in 1945 after service during the last war in the Canadian Dental Corps.

Surviving are his wife, Eva; a son, Hugh and daughter, Marguerite, at home; and a sister, Dr. L. Graeme, Edmonton.

Lester W. King—Dr. Lester W. King died on November 19 after a heart attack in Quesnel, B.C., at the age of 61.

He was born in Bellingham, Washington and took his dental course at North Pacific College, Oregon, graduating in 1924. He registered in B.C. in 1929.

A veteran of the First World War, during which he served with the U.S. forces, Dr. King was well known throughout the district, having practised both in Prince George and Quesnel.

Thomas A. Routledge—Dr. Thomas A. Routledge of Ridgetown, Ontario, died on the 24th November, 1957. He had practised dentistry in Ridgetown for 55 years.

Dr. Routledge was born in July 1880 and spent his early life in Orford Township. He graduated from the University of Toronto in 1902 and started his practice in Ridgetown.

He was a life member of the Canadian Dental Association, life member of Masonic Lodge No. 391, and a member of the Public School Board for more than 25 years. In his younger days he was well known as a tennis player in Western Ontario, and was also a lawn bowler. He was an honorary member of the R.C.D.S.

Surviving are his widow, Elizabeth; two daughters, Mrs. C. Carmichael, and Mrs. J. Neckel; two sons, Thomas and Keith, and one sister, Mrs. C. A. Elsley.

Hardress E. Hiltz—Dr. Hardress E. Hiltz of Truro, Nova Scotia, died on Monday, November 25th, within a few minutes of being struck by a car as he attempted to cross the street.

Born at Chester, Nova Scotia, Dr. Hiltz was in his eighty-second year. He graduated from Philadelphia Dental College in 1905, and in 1955 he retired having completed fifty years of active practice in Truro.

He was an honorary member of the Nova Scotia Dental Association, and also of the Truro Fire Brigade, having been a volunteer fireman for many years. He was a past president of The Truro Curling Club, and was a member of St. John's Anglican Church.

He is survived by one daughter Catharine, wife of Col. A. C. Holub of the U.S. Air Force, one son John of Winnipeg, Manitoba, and one sister, Miss Kate Hiltz of Truro.

Alfred Masson — Dr. Alfred Masson of St. Lambert, Quebec, died October 14th at the age of 56 years, at the Notre Dame Hospital in Montreal.

He was born at St. Anicet, Quebec, and received his early education at Valleyfield and St. Laurent. He graduated in dentistry from the University of Montreal.

Dr. Masson served in the Second World War and attained the rank of major in the R.C.D.C.

He was a member of the Lions Club of St. Lambert and past president. Member of Knights of Columbus; Chamber of Commerce, St. Lambert; Canadian Club of Montreal; du Cercle Universitaire, and the Lemoyne Club.

Surviving are his wife, Gabrielle, two sons, Guy and Pierre, and a daughter, Lise.

Frank E. Reath—Dr. Frank E. Reath of St. Thomas, Ontario, died on October 29, 1957.

Dr. Reath was born at St. Thomas, Ontario and received his early education at the Holy Angels' Separate School and Collegiate Institute. In 1915 he graduated from the University of Toronto and set up his practice in St. Thomas.

He was a member of Knights of Columbus and St. Thomas Golf and Country Club. Dr. Reath was a member of the Board of Education 1935 to 1945. He served in the Militia of St. Thomas in 1916.

Surviving Dr. Reath are his wife, a daughter, a son and a foster son.

Kenneth Neil McVicar—Dr. Kenneth Neil McVicar of Toronto, died on November 5th, 1957.

He was born in Toronto in 1898 and received his early education at Parkdale Collegiate, Toronto. In 1920 he graduated from the University of Toronto and began his practice in Toronto.

He was a member of the Fidelity Lodge, AF & AM. He served as a Sergeant in World War I.

Surviving are his wife, two sisters and a brother.

Edward C. Abbott—Dr. Edward C. Abbott of Toronto died on November 25th, 1957.

Dr. Abbott was born in London, Ontario. He graduated from the University of Toronto in the year 1899 and set up his practice in Toronto.

He was a member of the Mississauga Golf Club and a member of the Timothy Eaton Memorial Church. Dr. Abbott was on the staff of the Faculty of Dentistry, University of Toronto, for 20 years.

Dr. Abbott is survived by his brother, Dr. Frank Abbott, and a sister Lillian M. Abbott.

Charles John Rogers—Dr. Charles John Rogers of Ottawa, Ontario, died on November 2, 1957.

Dr. Rogers was born in Ottawa and received his early education at St. Patrick's School, Ottawa University; he graduated from the University of Toronto in 1922, and practised in the Ottawa Department of Veterans' Affairs.

He was connected with Pensions and National Health, Ottawa, and belonged to St. Patrick's Parish Bowling League.

Dr. Rogers served with the Royal Flying Corps, C.A.D.C., Royal Air Force from February 1917 to July 1919.

He is survived by his wife, two brothers and one sister.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th—8th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	September 25th—28th
1961	Saskatoon, Saskatchewan	June 25th—28th
1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Annual "At Home" Dance	Royal York Hotel, Toronto, Ont.	Mr. Calvin Torneck	Faculty of Dentistry Dental Students' Soc., 230 College St., Toronto 2B, Ont.
May 1, 2, 3, 1958	British Columbia Dental Association Annual Convention	Hotel Vancouver, Vancouver, B.C.	Dr. W. Ross Upton, Exec. Secretary	217 Medical Dental Bldg., Vancouver 1, B.C.
May 18-21, 1958	Convention—Ontario Dental Association	Royal York Hotel, Toronto, Ont.	Mrs. R. E. Booker, Secretary	234 St. George St., Toronto, Ont.
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia	Mrs. M. Kolb, Secretary	4001 Struce St., Philadelphia 2, Pa., U.S.A.
Sep. 14, 15, & 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. A. Slone	101 Rideau St., Ottawa, Ont.

SHORT GRADUATE COURSE

University of Toronto, Faculty of Dentistry

Orthodontics—Mar. 10-14, 1958—Enrolment Limit 12. Fee \$100—In charge—Dr. D. G. Woodside.
Dental Oral Surgery and Anaesthesia—April 21-25, 1958—Enrolment Limit 12. Fee \$100—In charge—Dr. J. H. Johnson.
 Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

Tufts University School of Dental Medicine Postgraduate Refresher Courses

Occluso-Rehabilitation I—Lecture & Seminar Course—March 3-7, 1958—\$250.
Minor Oral Surgery—Each Wednesday for 8 weeks, March 5-April 23, 1958—\$150.
High Speed Instrumentation for the Preparation of Cavities—March 17, 18, 19, 1958—\$100.

For further information and application write to: Director of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Massachusetts.

University of Alabama School of Dentistry

Refresher Courses:

Periodontology for the General Practitioner—February, 8, 9, 10, 1958
 Preventive Orthodontics—February 15, 16, 17, 1958
 Laboratory Procedures in Crown & Bridges
 Prosthesis for the General Practitioner—February 22, 23, 24, 1958
 Occlusal Adjustment—March 1, 2, 3, 1958
 Insurance, Investments, and Estate Planning (Part I) followed by Income Tax Guidance (Part II)—Part I, March 4, 5, 1958, Part II, March 6, 1958.
 Applied Maxillofacial Anatomy—March 8, 9, 10, 1958
 Practical Exodontia—March 29, 30, 31, 1958.
 Root Canal Therapy—April, 1958
 Pedodontics for the General Practitioner—April 1958
 X-Ray Technics for Dental Hygienists and Dental Assistants—April, 1958

For further information write: Director, Refresher Course Program, University of Alabama School of Dentistry, Medical Center, Birmingham, Alabama.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Discours du Saint-Père à la Fédération dentaire internationale

Le XII^e Congrès International d'Odontostomatologie de la Fédération Dentaire Internationale s'est ouvert à Rome le 7 septembre; au début de la première séance, fut récitée la "Prière du Médecin", composée par le Souverain Pontife Pie XII.

Le Saint-Père reçut les congressistes, délégués de 72 nations; en raison de leur nombre — plus de 8.000 accompagnés de leurs familles et de 2.000 industriels de l'Odontostomatologie —, l'audience se déroula dans la Basilique Vaticane. On notait la présence du président de la Fédération Dentaire Internationale, Dr Albert Joachim, avec le secrétaire général Dr Gerald Leatherman; de S. E. Mgr Emile Abascal Salmeron, auxiliaire de Pueblo de Los Angeles; de l'académicien pontifical professeur Paul Niehans.

Parlant en français, Sa Sainteté a adressé à l'imposant auditoire le discours suivant:

La grande manifestation, que constitue le XII^e Congrès de la Fédération Dentaire Internationale, réunit cette année à Rome plusieurs milliers de délégués provenant de toutes les parties du monde, et Nous sommes heureux de répondre aux désirs qui Nous ont été exprimés, en accueillant aujourd'hui, Messieurs, cette imposante représentation d'une branche si importante des sciences médicales.

La documentation, qui Nous a gracieusement été communiquée, donne une haute idée du programme de votre congrès: il comporte en effet, outre les relations scientifiques, des expositions et des démonstrations cliniques et techniques, destinées à donner une idée aussi complète que possible des travaux réalisés depuis cinq ans dans tous les domaines de votre compétence.

Nous ne saurions passer en revue cette véritable somme d'information; mais il Nous plaît de signaler quelques points, dont l'intérêt humain Nous a frappé en parcourant les rapports qui Nous sont parvenus.

Une des plus heureuses conséquences du développement universel des disciplines médicales est en effet de les rapprocher en manifestant davantage leur interdépen-

dance; et s'il est une partie de l'organisme au sujet de laquelle cette constatation se vérifie de façon plus frappante, c'est bien la région buccale, point de départ du système digestif, siège du sens gustatif, partie essentielle des organes d'élocution. Mais on resterait en deçà de la réalité en songeant aux seules fonctions mécaniques et physiologiques localisées dans cette région: on a constaté que les structures et l'état de la cavité orale influent, et parfois de façon décisive, sur la santé à la fois physique, nerveuse et même mentale de l'individu; ce qui d'ailleurs se comprend aisément, si l'on envisage les conséquences d'une mauvaise occlusion dentaire sur les opérations aussi essentielles pour la vie du corps et de l'esprit que la respiration, la mastication, l'articulation de la parole.

Des observations cliniques de nombreux praticiens et des recherches méthodiques poursuivies scientifiquement est donc née l'orthopédie dento-faciale, dont une branche importante, la pédodontie, se consacre aux enfants. Ces spécialités nouvelles sont à la vérité encore loin de réunir leurs acquisitions en un corps de doctrine bien constitué: trop de facteurs difficilement mesurables entrent en ligne de compte, et l'on se trouve en face d'enquêtes trop sporadiques, ou trop restreintes, pour arriver à des conclusions générales. L'étiologie a fait cependant de sérieux progrès dans le domaine si complexe de la croissance des différents tissus, des anomalies de constitution, de conformation ou de fonctionnement, à partir desquelles on tente d'expliquer les troubles ultérieurs et de suggérer les remèdes préventifs. Tous les spécialistes tombent d'accord pour déclarer que, là comme ailleurs, la prévention est le seul moyen de porter secours à de vastes ensembles sociaux. Or, en ce qui concerne l'orthodontie, les maux à prévenir ou à guérir peuvent avoir une origine antérieure ou postérieure à la naissance, héréditaire ou accidentelle. Une prévention efficace doit donc commencer par soigner la mère avant la naissance de l'enfant; elle surveillera ensuite la croissance du sujet à toutes les étapes, depuis l'apparition des premières dents jusqu'à l'établissement de la dentition définitive. Sur ce long trajet de la petite enfance à l'âge adulte le spécialiste se trouve amené à examiner les indices les plus variés: c'est ainsi que les études morphologiques des organes à la naissance constatent que certains d'entre eux, tels le cerveau, le globe de l'oeil et la langue, sont proportionnellement plus développés que l'ensemble de la tête; en ce qui concerne la langue, cette disposition providentielle correspond au besoin qu'aura l'enfant de fournir, dès ses premiers jours, un travail de déglutition abondant pour absorber le lait ma-

ternel. Mais il arrive parfois que la taille de la langue anticipe trop sur celle des mâchoires et provoque des pressions déformatrices susceptibles d'élargir à l'excès le maxillaire supérieur et de lui faire enclore complètement la mandibule; de là résulte une mauvaise occlusion dentaire. Les inconvénients de cette malformation peuvent se faire sentir, ainsi que nous le notions à l'instant, à la fois sur la mastication, la déglutition, la respiration et parfois même l'élocution. Aussi les parents doivent-ils faire examiner de bonne heure leurs enfants par un stomatologiste et s'efforcer, avec son aide, de corriger des habitudes, qui peuvent sembler anodines, mais ne le sont pas toujours: les enfants qui respirent par la bouche, ou continuent à sucer leur pouce après le premier âge, ceux qui mastiquent mal ou avalent trop vite, ceux qui rongent leurs ongles ou contractent continuellement certains muscles du visage, manifestent par là des symptômes qu'il convient de combattre et de faire disparaître sans tarder. Ce contrôle, excellent facteur d'éducation, ne contribue pas peu à corriger des défauts de caractère et à fortifier la volonté. On doit se réjouir de l'aide apportée ainsi aux parents dans la tâche si délicate de guider la croissance et de former harmonieusement la personnalité de leurs enfants.

L'orthopédie dento-faciale peut, on le voit, améliorer grandement le développement de certains enfants et adolescents. Plusieurs Etats en ont profité, en intégrant les services dans les programmes de prévention sanitaire et d'assurances sociales. Une organisation rationnelle des inspections médicales dès la petite enfance permet ainsi d'obvier à temps aux malformations congénitales, de déceler et de traiter sans tarder les premiers symptômes de désordres locaux ou même généraux, car il en est, comme le diabète, qui parfois se manifestent en premier lieu dans la bouche.

A mesure que la science médicale progresse, elle constate qu'elle ignorait encore certaines ressources de la nature et qu'elle avait parfois eu tort de vouloir se substituer aux forces de régénération pour corriger les maux qu'elle découvrait. Dans la guérison des corps, on ne commande à la nature qu'en lui obéissant, ce qui suppose d'abord qu'on la connaisse à fond et qu'on se conforme à ses lois. Il est souvent plus opportun de favoriser les processus naturels de défense que de chercher à détruire directement les foyers d'infection.

C'est ainsi qu'on a pu mettre en évidence les possibilités de guérison de certaines caries profondes en nombre de cas, où les techniques précédentes au-

raient conseillé de dévitaliser la dent pour éviter toute complication. On s'efforce aujourd'hui de préserver la pulpe par des précautions adaptées et l'on permet ainsi à la nature de se défendre elle-même avec plus d'efficacité.

Mais il restera toujours un très grand nombre de cas, où les interventions thérapeutiques auront à soigner ou réparer des maux déjà anciens. Travail de routine et souvent accablant, qui ne va pas sans poser parfois au praticien certains cas de conscience. S'il dispose aujourd'hui d'un matériel de plus en plus perfectionné, dont la précision et l'adaptation permettent un gain de temps considérable, il faut s'en réjouir; car nombre de patients, pressés par leurs occupations, craignent souvent la durée prolongée des traitements. Cependant le résultat des actions opératoires et des restaurations dépendra toujours de la science du dentiste, de son habileté professionnelle et de son sens de la responsabilité. Tout apprenti sait, par exemple, qu'avant de procéder à une obturation à l'aide d'amalgame métallique, il doit préparer très soigneusement la cavité dentaire et y ménager des angles et des bords capables de retenir l'obturation sans laisser pénétrer d'infiltration. Ce travail délicat requiert un finissage minutieux, redouté des patients, malgré le perfectionnement des abrasifs modernes. Si donc le chirurgien n'a pas la maîtrise et la conscience professionnelle suffisantes, il sera tenté de faire sommairement les choses, ou même de renoncer à la solution plus rationnelle, pour lui substituer un appareil plus facile à confectionner, mais plus coûteux et peut-être moins indiqué du point de vue technique et médical.

Nous avons appris récemment, avec une bien vive satisfaction, qu'on venait de mettre au point un nouvel instrument capable d'effectuer pratiquement sans douleur le nettoyage des cavités. Doué d'une vitesse exceptionnelle, atteignant les 200.000 tours à la minute, ce trépan est non seulement plus efficace que les appareils ordinaires, mais il évite au dentiste tout effort de pression, élimine la chaleur et épargne au patient les sensations désagréables accompagnant d'habitude cette opération. Nous osons espérer que les premiers résultats si prometteurs trouveront pleine confirmation et que le nouvel équipement permettra de soulager beaucoup de souffrances.

L'appréhension bien connue des clients pour la douleur des interventions sur les dents, et les conséquences fâcheuses qui s'ensuivent, n'ont pas manqué d'attirer l'attention des psychologues. La partie de votre art, qui étudie les soins dentaires à

donner aux enfants ou pédodontique, s'occupe tout particulièrement de ce problème. Il est facile de comprendre, par exemple, que l'attitude de l'enfant vis-à-vis du dentiste commandera presque toujours les réflexes de l'adulte. Si, grâce au judicieux concours des parents et du chirurgien lui-même, celui-ci apparaît à l'enfant comme un ami, qui rend un service important à sa santé, à son développement, et même à son travail, il est vraisemblable qu'il continuera à le consulter, dès que le besoin ou la prudence le conseilleront. Il n'est personne qui ne voie combien une attitude confiante facilite l'organisation rationnelle des soins individuels, et contribue plus encore au bon résultat des mesures sociales destinées à améliorer l'état général des populations, spécialement dans les régions où l'on obéit encore trop souvent à l'instinct plus qu'à la raison.

Les aspects, auxquels Nous venons de faire allusion, indiquent assez que l'intérêt des spécialistes de l'art dentaire et de la stomatologie, comme aussi des autres branches de la médecine, s'est porté de façon plus intense, ces dernières années, sur la personnalité du patient et sur les problèmes humains. Ces préoccupations sont passées d'ailleurs dans l'enseignement des facultés universitaires, et constituent désormais une partie nécessaire de la formation du savant et du praticien. Les spécialités réputées jusqu'ici les plus techniques sont amenées ainsi, en s'approfondissant, à s'insérer dans le grand tableau, toujours plus riche et plus admirable, de la connaissance de l'homme, de cet être qui s'appelle volontiers centre et roi de l'univers, assujéti sans doute aux servitudes du monde matériel, mais capable de les dominer, d'en comprendre les lois et de les utiliser en s'y soumettant. Ces lois du monde biologique restent, malgré leur complexité, relativement simples et faciles à formuler, si on les compare aux lois psychologiques et sociales qui régissent l'homme sur le plan spirituel. Toutefois, pour mystérieuse qu'elle demeure, la condition de l'esprit incarné se définit de jour en jour avec plus de précision, et l'on ne peut l'ignorer ni la sous-estimer sans méconnaître l'homme réel, tel que le Créateur l'a voulu et l'a fait. Cette découverte méthodique est due à la probité des chercheurs et à leur volonté d'aborder leur matière propre avec rigueur et pénétration, mais sans perdre de vue l'ensemble concret dans lequel leur travail s'insère. Ainsi les progrès de la pensée et de la science doivent-ils tendre à requière l'é-

cart qui les sépare et qui risque toujours d'entraîner de graves préjudices pour l'une comme pur l'autre.

Nous vous félicitons du souci d'exactitude et de la patiente continuité, avec lesquels vous poursuivez vos travaux, et vous adressons tous Nos encouragements pour

l'avenir. En priant le Maître de l'univers de couronner vos efforts au service de la science et de l'humanité, Nous vous accordons, en gage de ses faveurs, à vous tous ici présents, à vos familles et à tous ceux que vous désirez recommander à Dieu, Notre Bénédiction Apostolique.

Discours du Président de l'A.D.C. à la Société de Stomatologie de Québec*

A. GERALD RACEY, Montréal

Les événements extraordinaires survenus dans le monde scientifique, ces derniers temps, nous ont un peu bouleversés et nous ont laissé une drôle d'impression. Pour ma part, le lancement de ces astres artificiels m'a fait prendre conscience des réalisations merveilleuses de notre époque. En effet, depuis les derniers trente-cinq ans, le monde a assisté à des transformations et à des créations techniques qui surpassent tout ce que l'homme a accompli depuis son origine. A mi-chemin, durant cette période, nous avons vécu la seconde guerre mondiale et nous avons connu ses conséquences et les complications qu'elle a soulevées dans le monde. Ces changements ont produit dans notre philosophie et dans notre façon de vivre des modifications qui ont eu des repercussions profondes dans le domaine social et économique. Nos responsabilités ont augmenté et nous devons faire face à des problèmes auxquels il faut nous adapter et pour lesquels nous devons tenter de trouver des solutions. Notre situation de professionnels doit nous rendre davantage conscients des commotions qui agitent l'univers à l'époque où nous y vivons. Notre pays jouit d'une

prospérité extraordinaire et cette prospérité permet aux professions de se développer et de réaliser des progrès inconnus jusqu'à maintenant. Et la tendance actuelle veut que les individus se groupent exercer une action plus féconde au point de vue économique et social et les hommes de profession doivent faire de même s'ils veulent survivre au milieu du chaos temporel.

En tant que citoyens, les professionnels ont un devoir spécifique à remplir, car leur instruction et leur situation privilégiée les marquent pour un rôle important et défini dans notre société. En d'autres mots, le professionnel jouit dans la collectivité d'un statut avantageux. Mais qui dit droits signifie responsabilités et obligations, qui sont plus exigeantes dans notre siècle qu'elle ne l'étaient dans le passé. Les pas de géant faits par les techniques et les méthodes ont élargi le champ d'action du professionnel au service de la population; mais, pour cela, nos responsabilités n'ont pas diminué; au contraire, le public est devenu plus exigeant et s'attend à de meilleurs services de la part des professionnels.

On ne peut évaluer le rendement reçu par ce public de la part des individus chargés, par exemple, du maintien de sa santé,

* Prononcé le 2 décembre 1957

seulement par les progrès des techniques opératoires; au contraire, c'est par la compréhension des sciences sociales et de toutes celles qui s'y rattachent, et que possèdent les professionnels, qu'on peut vraiment juger de la valeur des services qu'ils rendent à la société. Ce n'est pas dans un secrétariat d'association, à Toronto, à Montréal ou ailleurs, ni au sein d'un comité exécutif de société que s'acquiert cette compréhension des hommes et des choses. C'est dans le cœur de chaque individu que doit s'élaborer cette charité—au sens large du mot—qui nous fait comprendre davantage nos semblables. Nous serons jugés sur notre bonne volonté, comme individus, à régler les problèmes sociaux et civiques qui s'offrent à nous tous, comme on nous appréciera pour les services professionnels que nous rendons à la population.

Voyons quel est le problème qui assaille la profession dentaire avec le plus d'acuité et d'urgence. C'est celui de la carence de dentistes à l'heure actuelle et pour l'avenir. Comment réglerons-nous ce problème, tout en maintenant et même en améliorant la qualité de nos services?

Les enquêtes et les statistiques nous montrent que 98% du peuple Canadien souffre de carie dentaire et que de ce nombre, seulement 35% reçoivent les traitements adéquats. La raison de cet état de choses se trouve dans l'augmentation formidable de la population du Canada depuis quelques années et dans le statu quo dans le nombre des dentistes. La proportion du nombre des dentistes en rapport avec la population s'aggrave d'année en année. Cette proportion se chiffrera en janvier prochain à 1 dentiste par 3,000 habitants.

Si nous voulons que la profession dentaire réponde efficacement aux demandes qu'on lui adresse, il est clair qu'il faut dès maintenant accroître les disponibilités dont nous disposons pour former de nouveaux dentistes. C'est un problème assez complexe! Actuellement, nos facultés dentaires peuvent à peine former un nombre suffisant de nouveaux dentistes

pour combler les vides laissés par les décès et les retraites. Cependant, il me fait plaisir de constater que la situation s'améliorera légèrement au cours des prochaines années, car l'Université du Manitoba a fondé une faculté dentaire, qui ouvrira ses portes en 1958 avec une trentaine de nouveaux étudiants. L'Université de Toronto aura bientôt un nouvel édifice pour abriter la faculté dentaire et celle-ci pourra aussi porter à 125 ses nouveaux étudiants. De même, l'Université de Dalhousie occupera bientôt une nouvelle bâtisse qui lui permettra d'accueillir 25 étudiants. Ces améliorations sont certes encourageantes, mais elles ne constituent qu'une solution partielle à notre problème.

En augmentant le nombre des élèves, il faut des professeurs qui soient à la hauteur de la situation: voici un autre dilemme qu'il faut solutionner. Il faut dire, malheureusement, que les méthodes pédagogiques utilisées pour l'enseignement dans nos facultés dentaires n'ont pas évolué comme il aurait été souhaitable qu'elles le fassent. Il y a parmi nous, il est vrai, toute une phalange de dentistes d'une compétence indéniable, mais tous ces dentistes ne sont pas nécessairement pour cela doués pour l'enseignement. En 1948, le Comité d'Enseignement de l'Association dentaire américaine exprimait en des termes non équivoques une idée que je trouve bien conforme aux exigences de nos temps. Je cite: "C'est pourquoi, il nous faudra, dans un avenir très rapproché, des professeurs dentaires, qui non seulement auront reçu une formation poussée dans les sciences biologiques et qui seront des maîtres dans les diverses techniques qui nous concernent, mais aussi qui posséderont des notions étendues dans les sciences sociales et dans les principes de la pédagogie. Pour que la dentisterie puisse répondre aux exigences modernes et à celles d'un avenir qui est tout près de nous et, pour sauvegarder avec succès, pour nous et pour le public, les principes de santé dentaire, principes que nous chérissons et que nous croyons essentiels à la survie de la démocratie,

pour accomplir ces choses, disons-nous, il nous faut une pléiade de professeurs qui aient reçu cette nouvelle orientation. Il faut immédiatement nous mettre à la tâche pour obtenir un nombre suffisant d'éducateurs dentaires qui auront reçu cette formation éminemment supérieure et essentielle."

Conscient de ces responsabilités, le Conseil d'Enseignement dentaire de votre Association dentaire canadienne, avec le concours pécuniaire de la Fondation Kellogg, organise depuis 1955, les réunions où se rencontrent les professeurs de nos facultés dentaires pour discuter de questions de pédagogie. Ces conférences ont obtenu un succès inespéré et nous croyons qu'elles auront une répercussion profonde sur l'enseignement dentaire au Canada.

Le recrutement des étudiants pose un autre problème! Comme pour le personnel enseignant, ici se soulève la question de dispositions et d'aptitudes pour les études dentaires. Nous croyons que de ces deux qualités la disposition d'esprit est la plus importante. Au cours des dernières cinquante années, des changements importants se sont produits dans la mentalité et les concepts de l'exercice dentaire et ces modifications, à leur tour, ont augmenté les responsabilités des praticiens.

Autrefois, le rôle du dentiste consistait surtout à soulager la douleur et à remplacer les dents absentes. Depuis ce temps, avec les progrès des sciences biologiques et grâce aux recherches, la fonction du dentiste a changé: son service le plus important consiste dans le "contrôle" des maladies dentaires. Et, tout porte à croire qu'avec le temps ce "contrôle" se changera en "prévention."

Dans le domaine de la pathologie buccale, la carie et les maladies des gencives sont l'objet de nos principales préoccupations. Malgré l'impulsion qu'on a donnée aux recherches en périodontie, cette science a fait peu de progrès et le contrôle qu'on exerce sur la gingivite ou la parodontose marginale a des limites assez vite atteintes. Et dans ces pathologies, qui ont une relation avec l'état général, on a en-

core à trouver des facteurs étiologiques difficile à déceler. Il en est tout autre pour la carie. En l'identifiant à ses premières atteintes et en la traitant à temps, nous en sommes rendus à la contrôler et nous nous dirigeons rapidement vers la phase de prévention. Mais les changements qui se sont produits depuis les premières heures doivent être suivis par d'autres qui porteront sur la mentalité et le sens de la responsabilité des dentistes. Le dentiste idéal devrait être imprégné d'un esprit de dévouement et de service. Il devrait aimer son prochain et être prêt à l'aider; il devrait adapter la même ligne de conduite pour ses patients et ses confrères. Sa vie devrait être faite de générosité!

Il n'est pas facile aujourd'hui de se recruter des étudiants pour la dentisterie; nous sommes en bute à une concurrence impitoyable. Les affaires et l'industrie utilisent des moyens nombreux et variés pour attirer vers elles les meilleurs candidats. Le génie, avec toutes ses ressources scientifiques, exerce un grand attrait. Et les événements qui viennent de se produire dans le domaine scientifique et dont je disais un mot tout à l'heure, viendront encore aggraver la situation. Non seulement, le commerce et l'industrie vont redoubler d'efforts, mais on peut s'attendre à ce que le gouvernement se mette de la partie pour inciter en grand nombre les hommes de demain à s'intéresser aux carrières scientifiques, telles que l'électronique, l'énergie nucléaire et d'autres du même genre.

Le coût élevé des études dentaires complique aussi le problème et nuit au recrutement des candidats. Il ne faut pas s'étonner que les étudiants choisissent une autre carrière, quand on considère que les revenus d'un dentiste sont parmi les moins élevés de toutes les professions.

De plus, l'aide pécuniaire offerte aux étudiants bien doués, qui se destinent à la chirurgie dentaire, ces bourses et ces prêts, dis-je, laissent beaucoup à désirer, si on les compare à celles qui sont disponibles pour d'autres activités scienti-

fiques et d'autres professions. Pour répondre aux demandes toujours grandissantes du public pour des traitements dentaires, il faudra que la profession dentaire songe à utiliser davantage les disponibilités que lui offre son personnel auxiliaire. Sur ce sujet, nous devons procéder avec prudence pour que ce personnel soit bien entraîné à rendre des services préventifs dans un champ d'action bien spécifique. Le rôle de l'infirmière dentaire ou de l'assistante, aussi bien que celui du technicien accrédité, est actuellement intégré dans l'exercice dentaire et contribue à améliorer son rendement. Par ailleurs, l'addition des hygiénistes dentaires à cette équipe permet au dentiste de consacrer plus de temps à son fauteuil et de voir un plus grand nombre de patients. Dans un cabinet privé, l'hygiéniste donne les traitements prophylactiques, détartre et polit les dents, s'occupe des dossiers, prend les radiographies, donne des conseils sur les soins particuliers à apporter aux dents et prend charge du système de rappel. De plus, son travail peut comprendre l'assistance au fauteuil, l'ouvrage et la direction du bureau. En hygiène publique, l'hygiéniste fait de l'éducation et de l'enseignement pour des agglomérations de personnes, surtout des enfants. Elle atteint son public par des organismes sociaux, des cliniques et des écoles. Elle se sert d'illustrations, de modèles et de tous les média possibles d'enseignement pour promouvoir des habitudes saines d'hygiène dentaire, en s'assurant la collaboration des parents et des enfants. Des statistiques montrent qu'une hygiéniste épargne au dentiste environ 40% de son temps. Jusqu'à maintenant, notre pays n'a qu'une école qui forme un nombre assez restreint de ces auxiliaires. Là encore, la profession dentaire souffre d'une carence de facilités d'enseignement.

Le seul point clair dans un horizon assez chargé est cette mesure qui, nous assure-t-on, est appelée à abaisser le quotient des demandes pour des services dentaires, je veux dire la fluoruration des eaux de consommation à une concentration d'une partie de fluor par un million de

partie d'eau. Je n'ai pas l'intention d'entrer dans les détails de cette question, que vous connaissez bien, mais je vous citerai ses avantages réels. Depuis au delà d'une trentaine d'années, la fluoruration a été l'objet d'études sérieuses qui ont porté sur tous ses angles. Ces recherches ont révélé que les fluorures, à la dose indiquée, sont dénués de tout effet toxique et qu'ils abaissent d'environ 65% l'incidence des caries dentaires. Et cette action sensationnelle du fluor se perpétue de l'enfance à l'âge adulte!

Nous avons donc en main une façon *pratique* et *positive* de solutionner un des problèmes les plus communs de notre époque en hygiène publique. Malgré l'opposition criarde d'une faible partie du public, cette mesure fait son chemin et on peut dire qu'à l'heure actuelle, presque un million de personnes boivent de l'eau fluorée. Il nous faut continuer à renseigner le public sur cette question.

Je viens de vous citer une des réalisations possible des recherches. L'histoire des recherches dentaires dans notre pays est intéressante à plus d'un point de vue et elle est de nature à nous encourager. Il y a une douzaine d'années, à peine \$5,000. étaient dépensés pour la recherche; aujourd'hui ce chiffre se monte à \$140,000. C'est grâce aux efforts de votre Association que fut formé, en 1945, un comité associé de recherches dentaires au Conseil national des Recherches. C'est l'organisme le plus important au Canada qui s'occupe de recherches dentaires. La première difficulté qu'a eu à résoudre le comité, à son tout début, était la pénurie de chercheurs susceptibles d'accepter des octrois pour des recherches. Pour remédier à cet état de choses, l'Association dentaire canadienne, par le truchement de son Comité de Recherches, a mis des bourses d'études à la disposition de candidats qualifiés qui désiraient se créer une carrière dans l'enseignement et les recherches. Depuis ce temps, plus de \$23,000 ont été mis à la disposition de quelques vingt dentistes pour les aider à leur formation supplémentaire dans une grande variété de sciences de base. Cette initia-

tive s'est avérée des plus heureuses. J'aimerais citer ici les paroles du président du Comité des Recherches: "Malgré le travail consciencieux de la profession dentaire et malgré la mise au point de techniques les plus ingénieuses, les maladies dentaires n'ont pas subi de recul. Ailleurs, d'autres maladies ont été mâtées ou sont en régression grâce à des mesures préventives; et ce fait fait ressortir avec plus d'acuité le peu de contrôle que nous avons sur cette engeance des maladies dentaires. Nous avons grandement besoin de recherches et de méthodes préventives."

Ce n'est qu'en embrassant le problème dans tout son ensemble et qu'en s'y intéressant à fond qu'on pourra entrevoir les causes des maladies buccales. Il faut s'éduquer nous-mêmes dans ce sens, tout en y éduquant le public. Car les fonds nécessaires à l'exécution de tout programme de recherches ne nous seront disponibles que si la population est éveillée à leur importance.

Le Comité d'Hygiène dentaire publique de l'Association dentaire canadienne a formulé les principes qui doivent guider l'élaboration détaillée d'un programme idéal dans ce domaine.

Ces principes établissent qu'il faut:

- 1) encourager la poursuite des recherches;
- 2) encourager et aider à la prévention a) en continuant d'éduquer la population d'une façon intensive en matière d'hygiène dentaire; b) en prônant l'utilisation de mesures préventives que seule peut donner une agglomération d'individus, comme la fluoruration;
- 3) en recommandant l'usage de services préventifs que peuvent rendre la profession dentaire et son personnel auxiliaire;
- 4) stimuler la valeur du diagnostic précoce et du traitement systématique des maladies que les connaissances actuelles ne permettent pas de prévenir.
- 5) recommander d'augmenter les disponibilités actuelles d'enseignement pour former un plus grand nombre de dentistes et de leurs auxiliaires et de tendre à les intégrer de plus en plus dans des programmes effectifs de santé dentaire.

En terminant, permettez-moi de dire que tout citoyen devrait se préoccuper du bien-être de ses semblables et que notre devoir, à nous dentistes, à cause de la formation que nous avons reçue, est de prendre la direction de tous les mouvements qui ont pour but la santé de nos concitoyens.

Dents vertes chez un enfant de 16 mois

Lors de la séance du 19 février 1957 de la Société de stomatologie de France, Mme *Papillon-Leage* présente un enfant dont toute la denture temporaire sans exception est de coloration verte. Les couronnes des dents sont atteintes dans leur totalité. Il est vrai que l'enfant a fait une jaunisse au 3^e jour qui est allée en diminuant pour reprendre au 11^e avec des phénomènes graves de déshydratation. Notons que le père a fait une hépatite à virus au 7^e mois de la vie intra-utérine de l'enfant. L'auteur rappelle que les Anglais *Claireaux*, *Gerrard* et *Marsland* dans la *Revue internationale d'hépatologie*, notent comme manifestations dentaires des icères néonataux: des dents vertes (chlorodentine) et une hypoplasie de l'émail. Cette coloration serait due à une pigmentation de la dentine par la biliverdine.

Des coupes de dents pratiquées longitudinalement montrent une grande bande verte dans la dentine. Or, le nombre des enfants qui au premier jour de la naissance font une jaunisse est très grand et rares sont ceux qui présentent cette teinte verte. L'auteur croit que dans le cas présenté, le père aurait transmis son hépatite au fœtus. Le placenta laissant passer le virus, l'enfant a été atteint *in utero* par le père.

On sait qu'avec le temps, les dents de lait se décolorent progressivement et que les permanentes ne seront pas atteintes.

Médecine et Hygiène, 30 octobre 1957

ÉDITORIAL

L'accréditation des techniciens dentaires

Dans la recherche d'une formule propre à solutionner le problème de l'exercice illégal, on a mentionné l'accréditation des techniciens et la profession dentaire semble s'intéresser de plus en plus à ce moyen de contrôler ceux qui sont appelés à l'aider dans son service auprès du public.

En quoi consiste l'accréditation des techniciens? C'est une organisation, par laquelle un groupement officiel de dentistes, soit le Collège, pour toute une province, soit une société locale pour une région donnée, s'entend avec une association reconnue ou incorporée de techniciens pour établir des règlements au sujet de leurs conditions de travail. Aussi, les laboratoires consentent à établir et à maintenir des standards approuvés par les deux partis (dentistes et techniciens) pour la formation technique et le comportement de leurs sujets. De son côté, la profession dentaire s'engage à demander à ses membres de ne patroniser que les techniciens qui font partie de cette association et à soutenir les revendications qu'elle juge raisonnables.

Un conseil formé d'un nombre égal de dentistes et de techniciens voit à l'application des règlements et agit comme tribunal d'arbitrage pour régler les litiges qui peuvent s'élever dans les relations entre les deux groupements. Ce conseil s'élit un président parmi ses membres.

Les deux corps intéressés peuvent s'entendre aussi en toute liberté, c'est-à-dire qu'ils ne le font pas sous le coup d'une loi provinciale ou municipale. C'est le fait de deux groupes d'individus, dont les fonctions se complètent et qui ont besoin d'aide mutuelle pour rendre service au public, décidant volontairement de se comprendre et de fixer un *modus vivendi* qui leur est également favorable. Ce système d'accréditation fonctionne depuis plusieurs années dans plusieurs Etats des Etats-Unis et il a créé entre les deux groupes une compréhension et un respect mutuel qui n'avaient jamais existés.

La province d'Alberta a adopté un plan du genre et jusqu'à date, elle se félicite de son initiative, puisqu'il a donné d'excellents résultats et qu'il ne laisse pas prévoir de difficulté pour l'avenir.

Le Comité des Services auxiliaires de l'Association dentaire canadienne, qui a étudié à fond la question, suggère cette façon de régler le problème d'exercice illégal aux provinces qui ne peuvent compter sur l'appui et la collaboration du gouvernement.

De plus, il affirme que le système qui est en vigueur dans l'Etat du New Hampshire lui paraît être celui qui offre le maximum de garantie de succès.

Ce système d'accréditation permet donc à deux groupes, qui ont besoin de l'un et l'autre pour bien servir le public, de s'entendre, de discuter entre eux leurs problèmes communs et d'élaborer une politique qui serve l'intérêt général.

Les temps sont révolus où le dentiste devait confectionner lui-même les prothèses de ses clients. Les progrès réalisés par la science dentaire dans le diagnostic, la pathologie, la périodontie, etc. et les exigences plus grandes de la population pour des traitements accaparent le dentiste au fauteuil et l'empêchent de vaquer à des occupations de laboratoire.

Le dentiste moderne a besoin de l'assistance précieuse du technicien, comme il lui faut l'aide de son infirmière.

L'accréditation fournit aux dentistes une formule de contrôler le domaine des techniciens, tout en sauvegardant les lois qui protègent déjà la profession dentaire.

GERARD DE MONTIGNY

Psychopathies infantiles d'origine dentaire

Dans la *Revue française d'Odonto-Stomatologie* (juin-juillet 1957, 1018) *Rottenberg* fait part de quelques observations personnelles, mais que chaque praticien peut également constater.

Les lésions esthétiques bucco-dentaires sont évidemment celles qui entrent en ligne de compte les premières.

Ces lésions peuvent être:

- 1) **congénitales** (bec-de-lièvre, larges diastèmes incisifs, etc.);
- 2) **pathologiques** ou accidentelles (mélanodontie caries vestibulaires importantes, dents mortifiées, décolorées, dents fracturées, malpositions dentaires ou dento-maxillaires, cicatrices, etc.);
- 3) **thérapeutiques** (les plus fréquentes, port d'appareils d'orthopédie dento-faciale).

Ces lésions pourtant parfois minimes peuvent provoquer des troubles du caractère pouvant aller jusqu'aux psychoses perverses décrites par *Hewyer*, dans les voies d'entrée de la démence précoce.

Un enfant normal travaillant régulièrement, de caractère facile devient indiscipliné, insolent, insociable, jaloux, agressif.

Présenté au neuropsychiatre, ce dernier devra découvrir l'épine irritative permettant le diagnostic et conditionnant le traitement.

Le dégoût de l'école et des études peuvent être consécutifs à des moqueries quand une lésion quelconque différencie un enfant de ses camarades. Nombre de complexes de timidité, d'infériorité, peuvent également être provoqués ou entretenus par des lésions esthétiques visibles persistant un certain temps.

Sans doute l'hérédité et l'ambiance sont à la base de la majorité des perversions enfantines, mais il n'en reste pas moins vrai que quelques-unes sont déclenchées par des lésions bucco-dentaires auxquelles on n'attache souvent pas assez d'importance. On sera alors en face non de *pervers constitutionnels difficilement traitables*, mais de *pervers conditionnels* qui retrouveront très rapidement leur équilibre.

Par la suppression de la cause initiale et la collaboration indispensable du spécialiste qui agira par suggestion raisonnée et par des explications fréquemment renouvelées, la guérison sera obtenue.

Rottenberg, avec juste raison, conseille de revoir certaines de nos conceptions classiques; par exemple lors d'une incisive fracturée, l'attente d'une calcification radiculaire peut précisément provoquer une psychopathie, qu'une réparation provisoire esthétique aurait pu éviter. Suivent quatre observations particulièrement suggestives.

Médecine et Hygiène, 30 octobre 1957

Congres de l'Arpa Internationale

Le prochain congrès de l'Arpa Internationale aura lieu à Paris à la Nouvelle Faculté de Médecine, du 7 au 12 juillet 1958.

Ce congrès aura une importance exceptionnelle, car ce sera le 25e anniversaire de l'Arpa Internationale.

Les auteurs ayant des sujets de communications sont priés de les adresser dès à présent au Professeur A. J. Held, président de l'Arpa Internationale, Institut Universitaire de Médecine dentaire, 24 rue Micheli-du-Crest, Genève, Suisse.

De nombreuses festivités sont prévues en marge des réunions scientifiques ainsi qu'un comité des Dames.

Technique de l'extraction

par PAUL-E. POITRAS, D.D.S., Montréal

Avant la découverte de l'anesthésie, les dents ne s'ôtaient, ni s'arrachaient à moins qu'elle ne branlassent, ni ne tombassent quasi d'elles-mêmes. Le baume d'acier restait le remède héroïque, utilisé pour mettre fin à la dent malade, tout comme maintenant. Donc, "rien de nouveau sous le soleil"!

A Delphes, ville de l'ancienne Grèce, située au pied du mont Parnasse, Apollon avait un temple; là, il rendait des oracles par la bouche de la Pythie. A l'intérieur de ce temple, il y avait sur une table un davier, fabriqué de plomb, dont les ministres du dieu se servaient à tirer, sans violence, les dents des miséreux, des vieillards, souffrants de périodontite explosive.

Hippocrate, le grand médecin de l'antiquité, ne veut pas que l'odontalgie compromette, son renom; il se borne à écrire: "Quant une dent est mauvaise, enlevez-la".

Au début de l'ère chrétienne, à Rome, une multitude d'affranchis grecs habitaient le mont Aventin. Les malades se pressaient à leur consultation à cause de la réputation qu'ils avaient d'être de bons chirurgiens, rebouteurs, ventouseurs, arracheurs de dents. Ces empiriques, plus ou moins charlatans, aimaient donner aux instruments nécessaires à leur métier des noms savants, bien qu'ils ne fussent qu'une reproduction de ciseaux de menuisier, de tenailles de forgeron. C'est pourquoi un auteur voulant se moquer de ces pseudo-scientistes écrivait: "Quand vous avez une dent à enlever, quelquefois c'est la dent qui vient, le plus souvent c'est la mâchoire. . ."

Une souffrance trop aigue était parfois adoucie par l'ivresse, mais, si un diag-

nostic dictait l'avulsion d'une ou plusieurs dents, les guérisseurs recommandaient le chanvre, l'opium, le vin comme moyen de diminuer la douleur de l'extraction. L'étude des anesthésiques, au XIX^e siècle, changea des habitudes acquises d'une longue pratique. Antérieurement, la dent s'enlevait de la façon la plus simple: elle était ébranlée en glissant entre l'alvéole et la racine un pied de biche, appelé déchaussoir, jusqu'au moment où rendue mobile, il ne restait plus qu'à en débarrasser la gencive. Cette coutume d'ôter les dents n'empêchait pas, au besoin, de recourir au davier. Je me rappelle d'avoir manqué une racine, mais de n'avoir, jamais raté une couronne. Aujourd'hui, dans les universités, on s'efforce d'enseigner à l'élève à extraire la couronne et la racine de la dent.

A partir du IV^e siècle, même au Moyen-Age, la médecine était exercée par des moines, concurrencés par des femmes pieuses, ayant une connaissance étendue des incantations; elles se donnaient le pouvoir d'exorciser Satan, la cause de tous les maux, du moins on le pensait. Elles honoraient Sainte-Apolline dans un but intéressé: n'espéraient-elles pas que la thaumaturge supplie le Seigneur de rendre la santé aux humains?

Vers 1600, Saint François de Sales⁽¹⁾ atteste avoir été délivré d'une rage de dents après avoir commencé une neuvaine à Sainte-Apolline et vénéré ses reliques. L'évêque de Genève croyait plus au miracle de Dieu qu'à la science des opérateurs pour les dents.

Les musulmans, conquis par la civilisation hellénique dont ils avaient constaté la valeur à Byzance, commencèrent à la diffuser en faisant le tour de la Méditerranée par l'Egypte, la Libye, la Tunisie,

Résumé d'une conférence prononcée, le 29 mai 1957, à une réunion de la Société Historique de Montréal, tenue à la Bibliothèque Municipale de Montréal.

(1) Patron des journalistes canadiens catholiques.

l'Algérie, le Maroc; installés en Espagne, au Xe siècle, les Sarrasins enseignèrent la médecine aux occidentaux; ils disaient comme les anciens: "Méfiez-vous des extractions, ce sont des opérations délicates qui n'appartiennent pas aux charlatans, mais aux chirurgiens; il faut avoir des daviers préparés pour chaque dent. . ."

La phrase "Je le pensai, Dieu le guérit" est d'Ambroise Paré (1517-92) qui, toute sa vie, exposa à ses contemporains les dangers de l'extraction.

Le pélican, dont il se servait, est un instrument dangereux, même dans les mains des experts. Le choc opératoire n'est pas évité; souvent plusieurs dents saines sont enlevées, la mauvaise est laissée, parfois la machoire est brisée. En conclusion, il ajoutait: "Je conseille à ceux qui voudront se faire arracher les dents qu'ils aillent aux vieux dentateurs et non aux jeunes qui n'auront pas encore reconnu leurs fautes".

À la lecture du "Dictionnaire des sciences occultes", de l'abbé Miche, j'ai connu un Jean Brioché, arracheur de dents du XIIe siècle, qui, en plus, exploitait un théâtre de marionnettes pour attirer les patients. Son goût des voyages l'ayant conduit à Solveivre, Suisse, il y fut appréhendé et condamné à mort pour sorcellerie. Après un deuxième procès, il fut libéré; aussitôt il retourna à Paris; en cours de route, il pensa qu'un dentateur et un comédien sont deux choses différentes: "Ne sutor ultra crepidam". Un almanach belge, publié en 1650, sans danger d'être démenti, imprimait: "Les saignées, les extractions ne sont exécutées que les jours heureux, autrement le malheur vous frappe".

Pierre Dionis (1643-1718), dans son livre: "Cours d'opération de chirurgie", engageait les chirurgiens à ne pas pratiquer l'extraction des dents à moins qu'ils y soient contraints. En cas de nécessité, voici comment il procédait: "On fait asseoir à terre, sur un carreau seulement, celui à qui on veut arracher une dent. L'opérateur se met derrière lui et ayant engagé la tête entre ses deux

cuisses, il la lui fait hausser un peu".

"La bouche du patient étant ouverte, il y remarque la dent gâtée afin de ne pas prendre l'une pour l'autre; puis, avec un déchaussoir, il sépare la gencive de cette dent qu'il empoigne ensuite avec l'instrument qui lui aura paru le plus convenable auquel il fait faire la bascule pour extraire la dent".

"Quand on ne l'a pas manquée, le malade crache sa dent avec le sang qui sort de la gencive".

"Par ce procédé ou par un autre le patient est toujours fort maltraité".

Pendant le régime français, les colons au Canada s'occupaient d'abord de vivre. Une bonne alimentation leur donnait une denture saine mais si, par hasard, les habitants souffraient des dents, ils couraient chez un sorcier, dont la réputation d'éloigner la douleur, s'étendait au loin, puisque ce guérisseur connaissait une manière efficace de frotter la gencive et les dents avec divers genres d'urticacées propres à soulager. En vérité, les extractions étaient rares, les dents malades étaient gardées le plus longtemps possible. Quand il fallait en venir à cette extrémité, on se rendait chez le forgeron plutôt que chez le chirurgien-barbier qui se faisait payer pour son travail, alors que le premier faisait l'opération gratuitement. Il ne coûtait rien de planter un clou dans un arbre, dans une porte de grange; l'opération permettait à la dent de tomber seule. Cette coutume, venue de France, était pour les nôtres d'usage courant: "Les clous avaient attaché à la croix Notre Seigneur et avaient gardé la vertu de délivrer les croyants de tous les maux".

Lorsque les Anglais furent en possession du pays, le sort des pionniers canadiens ne fut pas amélioré. Après plus de vingt-cinq ans d'allégeance, l'Almanach de Québec, publié de 1780 à 1841, annonce qu'en 1791, dans le district de Montréal, il y avait neuf "Saigneurs et arracheurs de dents" dont quelques-uns, après examens, furent nommés par le gouverneur, chirurgiens, apothicaires, médecins. De

ceux-ci était Auguste-François Globensky, né à Berlin, Prusse, en 1754, de l'union de Joseph Globinskind et de Marie Ritcher. A.-F. Globinsky était arrivé au pays, en 1776, major dans l'armée du baron Riedesel. Rendu à la vie civile après la défaite de Saratoga, il s'établit à Verchères et maria, à Varenne, Marie-Françoise Lafleur dit Brosseau, en 1784. Il est le grand-père de Stevens Globensky, président des chirurgiens-dentistes du Québec (1892-97), président du Collège dentaire bilingue du Québec (1897-99), de Joseph Globensky, président du Collège dentaire bilingue du Québec (1901-02). Stevens est décédé, en 1911, Joseph, en 1937.

En dépôt du nombre des parents qui utilisent une ficelle pour débarrasser un enfant d'une dent branlante, il m'arrive de rire d'un dessin humoristique qui représente un dentiste, affligé d'une fluxion, avec une corde solidement attachée à la dent malade et à une poignée de porte. Méthode primitive d'un poltron de guérir un mal sans recourir à l'homme de l'art.

Dans un journal des Trois-Rivières "Le Nouvelliste" j'ai lu ce récit, signé Rosario Blanchet: "Dans les chantiers du Saint-Maurice, quand un bucheron éprouvait une rage de dents, il prenait les grains de plomb d'une cartouche, les introduisait dans la cavité de la dent malade et coiffait les grains de plomb de gomme de sapin dont la fermentation faisait exploser la dent après quoi les restes étaient retirés de la mâchoire. Une fracture se présentait-elle? Le patient était transporté d'urgence à l'hôpital, d'où le cal formé, le pauvre bougre retournait au travail, souvent infirme pour la vie".

Le calcium et le phosphore, principaux constituants des os et des dents, sont indispensables; ils sont fournis à l'organisme par la nourriture que nous consommons. C'est pourquoi un régime alimentaire bien équilibré apportera au corps la quantité nécessaire de ces minéraux et, pendant la période utérine, verront à la formation des parties dures du fœtus. A ce moment, si le métabolisme maintient une composition normale de l'émail et de la dentine, il est faux de

dire: "La naissance d'un enfant occasionne à la mère la perte d'une dent." "Les dents de lait, évoluées pendant la grossesse, sont des causes de caries chez la mère." Aussi le médecin se doit de lutter contre ces superstitions et de recommander aux femmes enceintes l'extraction et l'obturation des dents malades.

Sous l'excuse de vulgarisation de la science dentaire, Levi-S. Parmly choisit ce prétexte de faire étalage de son talent pour éditer le premier livre dentaire au Canada qui fut imprimé à Québec, Côte de la Montagne, le 29 août 1815, par J. Neilson. Le but de son livre "SUMMUM BONUM" était d'engager les Canadiens à faire soigner leurs dents par le signataire. Comme mot de la fin, il écrivait: "Mon seul désir est un encouragement constant du public et mon ambition est de le servir".

Au temps de l'Union des Canadas, le nombre des dentistes étaient restreint bien que la profession fût libre et que la publicité dentaire fût courante. Cette réclame que je date vers 1868 me transpire d'aise:

"Montréal à Québec.—Voyage de plaisir à Québec—

"Ce billet donne droit au PORTEUR d'aller au numéro 192 rue Notre-Dame, avant et après ce VOYAGE pour se faire poser, orifier (sic), plomber, émailler, et extraire les DENTS à des prix qui conviennent à toutes les classes de la société."

"A l'enseigne de la grosse dent d'or. Vis-à-vis Devins & Bolton. Même batisse que J. Léveillé, photographe."

L'annonce est bien faite. Le propriétaire du cabinet dentaire n'est pas mentionné, mais le numéro et le nom de la rue, l'enseigne, les voisins, etc., permettent aux patients en perspective de se rendre, sans erreur, à l'endroit indiqué. Cependant, ma curiosité n'était pas satisfaite. C'est pourquoi, j'ai feuilleté les Almanachs des adresses de Montréal, édités par Lovell. J'y ai lu qu'en l'année 1868, le docteur E. Mathieu exerçait la chirurgie dentaire au numéro, 192, rue Notre-Dame.

Dans les "Mémoires" de Philippe-Aubert de Gaspé, celui-ci, à sa façon, donne l'origine du proverbe "Il ment comme un arracheur de dents".

Le père Romain Chouinard avait des dents bien enracinées comme une marèche (requin). Un jour qu'il souffrait d'un mal de dent à se briser la tête contre les cailloux, sa femme lui conseilla d'aller chez le petit Bram (Abraham), plus savant que les chirurgiens branchés (brevetés). Menuisier de son métier, il avait les épaules et les mains deux fois plus larges qu'un homme normal.—"Pour guérir mon mal, c'est Chouinard qui parle, il s'arme d'un pénican (pélican) d'un pied et demi de longueur ressemblant plus à des tenailles de forgeron qu'à un instrument de chirurgien. Il me fait asseoir à terre en me disant pour me donner du courage." La douleur sera égale à une piqure d'épingle".

Comme la dent résistait, aidé de sa pince bien fixée, il commença avec toute sa force à me faire sauter autour de la chambre. Pendant que je beuglais, un voisin se mit à califourchon sur mes épaules, m'empoigna le front à deux mains et dit en riant: "Hardi, petit Bram"! Encouragé, le petit Bram nous souleva tous les deux, trois fois de terre, au quatrième coup la dent dérapit. Quant au petit Bram, tenant son pélican élevé au-dessus de sa tête, il cria: "La voilà! La voilà! je savais bien qu'elle ne me ferait pas d'affronts".

Chez un médecin de ses amis, de Gaspé entend des cris épouvantables, venant d'une pièce voisine. C'était un habitant qui se faisait arracher une dent à prix réduit: trente sols au lieu d'un écu. Le médecin s'amusait de la vogue de son apprenti plus grande que la sienne qui, après dix-huit mois d'expérience, n'était guère plus habile.

Madame Enault, charlatan notoire, installait sa voiture, en 1882 à Montréal, en face de la colonne Nelson, pour extraire les dents sans douleur, gratis à certaines heures et débiter en même temps, au prix d'un dollar le flacon, une panacée contre les maladies qui affligent l'espèce hu-

maine. Son habilité à débarrasser une bouche était telle qu'elle aurait pu prendre comme devise:

"Dieu donne les dents, moi, je les cueuille".

La même année, juillet 1882, l'Union Médicale publiait "L'arracheuse de dents". "L'avez-vous vue? Non. Eh bien! décidément vous êtes aveugle. Elle n'était parmi nous que d'hier et déjà elle remplissait nos temples, nos palais, nos mansardes, nos rues . . . et sa caisse. . ."

"Avez-vous des dentistes parmi vos connaissances? Quelle tête font-ils? Moi, j'ai deux dentistes pour amis. L'un dit d'un ton convaincu qu'elle encaisse plus qu'on ne pense et l'autre ne dit rien; il s'achemine tout rêveur vers la Place Jacques-Cartier et, là, il repait son âme de sourires de satisfaction qui s'épanouissent sur la bouche édentée des clients de madame Enault. Hélas, il n'a pas souvent chez lui de pareille aubaine".

"Et l'omnicure donc! les gens se disent: Quand on arrache les dents si bien, on peut faire bien d'autre chose; et la caisse se remplit à déborder, le tour est joué. "Infinitus est stultorum numerus".

Un autre charlatan fut le docteur Edgar-Rudolph-Randolph Parker, né au Nouveau-Brunswick, vers 1872. L'enseigne étique de dentiste, fixé à sa porte, lui fit faire un gain de soixante-quinze cents en trois mois. Humilié, il commença à annoncer sa profession par un spectacle, logé dans un wagon bigarré; de plus, il offrait une prime de cinq dollars à quiconque prouverait souffrir d'une dent qu'il extrairait. Cette habilité à s'attirer des patients lui réussit au point d'enlever trois cent cinquante-sept dents en une seule journée et, en soixante ans, "The noble tooth-plumbing profession" lui apporta des millions de dollars.

Fatigué d'édenter les Canadiens, il établit un bureau à Brooklyn qu'il ferma peu de temps après pour installer vingt-huit cliniques avec un personnel de soixante et dix-huit dentistes dans les états de la Californie, de l'Orégon, de Washington. En 1915, il eut la permission légale de porter le nom de *Dr Painless Parker*.

Au mois de novembre 1952, âgé de quatre-vingt ans, il mourut à San Francisco.

J'ai analysé nombre de techniques, allant de la période des anciens, des moines, des charlatans, à la nôtre. La découverte de l'anesthésie et de l'anal-gésie, au XIXe siècle, nous a permis d'éliminer la souffrance, d'oublier des gestes qui pour être séculaires n'en étaient pas moins brutaux. La douleur écartée, les dentistes ont eu la liberté

d'opérer dans des conditions anatomiques autrefois inexistantes à cause de la rapidité avec laquelle le travail devait être exécuté. Il est vrai, les progrès dentaires ont rendu infructueux les superstitions de nos ancêtres, mais restons, tout de même, modestes puisque nos descendants, en ignorant nos efforts, se moqueront de nos oeuvres, sans penser que d'autres, avant eux, ont lutté pour leur donner une meilleure connaissance de la spécialité qu'ils ont étudiée.

Nouvelles de l'Association

Bottin de 1957

On peut encore se procurer un certain nombre du nouveau bottin de l'Association dentaire canadienne. Cette publication, qui est faite tous les deux ans, renferme la liste des officers et une classification récente de tous les membres de la profession dentaire au Canada. Ce bottin coûte \$1.00 et on peut se le procurer jusqu'à ce que les réserves soient épuisées, en s'adressant au Secrétariat, 234 rue St-Geroges, Toronto, Ontario.

Les dentistes descendent en sixième place pour les revenus

La plus récente publication du "livre vert" du Ministère du Revenu National, qui donne les statistiques de l'impôt, montre que les dentistes sont descendus dans l'ordre des moyennes des revenus de la cinquième place qu'ils occupaient en 1954, à la sixième place, en 1955. Voici une liste partielle des gens que le "Financial Post" considère comme individus à gros revenus.

	Nombre	Moyenne des revenus	Moyenne de l'impôt
Ingénieurs et architectes	1,870	14,007	3,484
Avocats, notaires	5,570	12,243	2,800
Médecins, chirurgiens	10,680	12,166	2,558
Comptables	2,930	9,315	1,741
Successions	4,520	8,809	601
Dentistes	4,020	8,554	1,356

Courtiers	72,360	6,224	992
Autres professions	7,210	5,411	704

La moyenne des revenus pour tout le Canada est montée de \$3,433, qu'elle était en 1954, à \$3,535, pour 1955.

Il est peut-être opportun de rappeler que l'année 1957 est le quarantième anniversaire d'une loi qui était "temporaire", qui devait durer que durant le temps de la guerre et qui devait être rappelée à la fin des hostilités (1918). C'est ainsi que prit naissance au Canada l'impôt sur le revenu et qu'il y est demeuré.

"La démocratie à son pire"

"La démocratie dans sa plus mauvaise définition: le gouvernement d'une majorité désintéressée grâce à une minorité mal renseignée." C'est la description que faisait un citoyen de North Battleford du rejet d'un projet pour fluorurer l'eau de l'aqueduc au cours d'un plébiscite, tenu il y un an.

Le docteur C. F. W. Hames, directeur du service de santé de North Battleford, a cité cette remarque dans son rapport rendu public récemment. Il a dit que, dans le referendum, 23 pour cent des voteurs ont approuvé la fluoruration; 24 pour cent se sont prononcé contre et cinquante-trois pour cent n'étaient pas assez intéressés pour voter dans un sens ou dans l'autre.

Le docteur Hames ajoutait: "Espérons qu'avant longtemps les enfants de North Battleford profiteront des avantages de

l'eau fluorurée, comme le recommandent les autorités en hygiène publique". Cet extrait est tiré des Lettres de Santé du Ministère de Santé de la province de Saskatchewan.

L'attitude de la Nouvelle-Zélande

On peut lire ces lignes sous le titre "Position des autorités locales" dans un résumé des conclusions de la Commission d'Enquête sur la Fluoruration de l'eau de consommation en Nouvelle-Zélande:

"(2) Un referendum ou un vote pris dans certain endroits est une mauvaise méthode d'en venir à une décision sur une question aussi technique et aussi complexe que la fluoruration. (3) Les autorités des villes ont comme fonction de prendre les décisions qui s'imposent pour le bien de leurs électeurs et on devrait leur donner l'autorité nécessaire pour qu'elles jugent si oui ou non l'eau de leur arrondissement doit être fluorurée."

Le rapport ajoute "nous sommes d'avis qu'il faudrait utiliser partout le procédé de fluoruration".

Nouvelles sur les progrès des constructions

Dalhousie: Découpage du Halifax Mail Star

"Les étudiants de la faculté dentaire de l'Université Dalhousie espèrent occuper leur nouvel édifice après les vacances de Noël, déclare le docteur J. D. McLean, doyen de la faculté.

"L'édifice, dont les plans ont été réalisés par une firme d'Halifax, J. Philip Dumaresq et les associés, pourra abriter le double du nombre des étudiants actuels. L'extérieur de la bâtisse est à peu près terminé et celle-ci contiendra deux laboratoires de pré-clinique, des laboratoires plus petits, une clinique centrale, quatre salles pour des démonstrations ou autre usage, en plus d'autres commodités que ne possède pas la vieille école.

"Le docteur McLean prétend que le nouvel équipement de l'édifice coûtera à peu près \$200,000 et que le nombre des étudiants pourra être porté à 24 ou 25 par classe; ce nombre est actuellement de 12 ou 13 par classe.

"La nouvelle faculté qui aura une aile de trois étages en avant et deux étages pour le gros de l'édifice ne le cédera en rien aux autres écoles dentaires du Canada pour les étudiants réguliers."

Toronto

Les derniers détails sont à peu près réglés pour le nouvel édifice qui abritera la faculté dentaire de l'Université de Toronto. La compagnie qui a obtenu le contrat pour la démolition des vieux immeubles, sur le terrain où sera construite la nouvelle école,

a commencé son travail. Quand le terrain sera déblayé, l'Université demandera des soumissions pour la construction nouvelle.

Alberta

On apprend ce qui suit dans un paragraphe d'une lettre que le docteur Hamilton, doyen d'Alberta, écrivait récemment au docteur Gullett: "Dans son discours à la collation des grades d'automne, tenu le 2 novembre 1957, le président de l'Université, le docteur A. Stewart déclarait:

"Il nous fait plaisir d'annoncer que le gouvernement de la province nous a assuré son appui pour notre programme de construction qui nous permettra d'agrandir les locaux occupés par les départements de science. La faculté de médecine sera agrandie pour lui permettre de loger l'Ecole des Infirmières et l'Ecole de Physiothérapie, qui occupent actuellement des locaux temporaires; de plus, ces additions donneront plus de logement aux départements de pré-clinique de la faculté de médecine, de pharmacie et de dentisterie. Ces constructions commenceront dès que les plans seront complétés."

"En fait, la faculté de médecine sera complétée. La superficie occupée par la faculté dentaire est de 45,000 pieds. La clinique et les laboratoires actuels sont appelés à disparaître et on aura des divisions complètement nouvelles. Il s'agit donc d'une nouvelle construction."

Nomination à la Société dentaire du Nouveau-Brunswick

Le docteur E. D. Halford est entré dans ses nouvelles fonctions de secrétaire-régistrateur de la Société dentaire du Nouveau-Brunswick, dont le siège local est situé à 459 rue Demont, Lancaster, N.-B.

Nouvelles

Au cours de l'assemblée annuelle, le docteur Frank Martin, de Toronto, président du Comité de publication de l'A.D.C. vient d'être élu président de tout le Collège International des Dentistes. Il y avait longtemps qu'un Canadien n'avait pas été élu à ce poste.

Le docteur Wesley J. Dunn, de Toronto, rédacteur du Journal de l'Association dentaire canadienne, vient d'être élu président de l'Association des rédacteurs dentaires. C'est la première fois qu'un canadien accède à la présidence de cet organisme.

"Facts on Fluoridation"

La nouvelle édition du fascicule "Facts on Fluoridation" vient de sortir de presse et il est mis à la disposition des intéressés. On peut en obtenir une copie gratuitement. Pour un plus grand nombre, on devra payer 0.25 du fascicule.

Health Insurance—Where Do We Stand?*

DON W. GULLETT, D.D.S.**, Toronto, Ontario

In the preparation of these remarks two rather opposing problems arose in my mind. First, the essential need of arousing your interest to this important matter and second, the fear of over-stating the position. For some time we have been forced to recognize our position. There has been hesitation because this subject is political and therefore subject to change. But, the time has come to make frank statements. That I propose to do.

WHAT IS THIS THING CALLED HEALTH INSURANCE?

When in Britain at the time of the introduction of the British National Health Scheme in 1948 a prominent man in the health field said to me—"When you return home use every available opportunity to warn your men of the need for

preparation to meet this thing. You probably do not like it but it will come to you. We did not heed the warnings and were caught short". Since then, many incidents have occurred giving cause to remember those words.

A trend exists today which is not localized in any one country for all have it, some more and some less. This trend, if it still can be considered only a trend, is characterized by the existence of several kinds of legislation which when grouped together are known as social security measures. The philosophy behind these legislative actions is that many things can be done collectively better than individually for the most good to the

* An Address delivered at the Luncheon Meeting of the Academy of Dentistry, Toronto, at the Winter Clinic, November 28th, 1957.

** Secretary, Canadian Dental Association.

greatest number. Old age pensions, unemployment insurance, mothers' allowances, health insurance and many others are examples of social security measures. The pros and cons of this movement are debated on a world-wide scale.

In reality we are in the midst of a great social revolution recognized by slogans such as 'age of the common man', 'the levelling of the society', 'the welfare state' and others. As pointed out by some intelligent men there is a danger that an age of mediocrity will be developed. The nature of its progress is that first one group and then another is drawn in to collective action. The professional man is an individualist and the process of changing over to collective activity can prove difficult.

The welfare planners, economists and philosophers have written at great length, but they differ sharply in their predictions. The titles of these books run all the way from "The New (abundant) Society" to a critical book titled "The Road to Serfdom". Take your choice. As a matter of fact people of today seem readily to accept what they want to believe and not necessarily what they should believe. On the one side these writers attribute all progress in recent years to the adoption of social security measures. While the other side claims that if this trend continues we will need a wheel barrow to take the money to market to buy a peck of potatoes.

To the investigator of this movement in several countries, a pattern of development appears consistent. Plans are initiated by welfare planners, then are taken up by politicians. Repeatedly, it is only after a political commitment is made that the economist is called in. Evidence exists that this sequence of events, leading up to social security measures, has proved rather disastrous to the economy of the country. The fulfilment of the measures demands a plentiful supply of money, money becomes available through production and production depends upon alert, energetic people in any country. This is not to be construed as an argu-

ment against social security measures, for many are good. It is an attempt to point out that caution is a necessity in introducing new proposals or extending established ones.

Who objects to receiving a cheque from the government? Repeatedly, people jocularly remark that they hope the old age pension doubles or triples by the time they reach the stated age. The politician stands on the rostrum promising increased benefits and without drawing a breath also promises reduced taxation. A cursory examination of government budgets—those who even bother to do this much are as scarce as old fashioned methodist ministers at a poker party—will quickly find out that fixed charges for social benefits demand high taxation. Furthermore, both cost of established benefits and number of benefits always continue to increase. One characteristic feature is that no country once travelling this road ever returns.

People have the illusion that the government can furnish essentials of life free while they themselves can use their own money for luxuries.

The delusion is that in the end taxation to supply the so-called free essentials absorbs all the money and the people have neither the services they anticipated nor money left for the luxuries they crave.

The whole movement is one of central planning, wherein sooner or later decisions for a whole group fall upon the desk of some one man. The decision made applies to a group as a whole whether or not applicable in a particular case. Hence individualism becomes diminished. The whole training of a professional man is for him to act as an individual.

Any action which is proved to have majority support of the people is ideal for political use. Public opinion polls on the question of health insurance have shown repeatedly the great majority of Canadians in favour. Few people have inquired into the operation of health insurance further than making an economic interpretation of their own. Evidence abounds that most people believe others

have more money than they themselves possess. Practically everyone seems very willing to have the government pick up the bill. Seldom does anyone even think that the money the government spends is his own. The state does not sow neither does it spin. Under any health insurance scheme physicians, surgeons and dentists will do the work.

What I have attempted to say so far is that health insurance, including dental service, is a part of a larger movement or social revolution exemplified by social security legislation on a world-wide basis.

REASONS FOR CONCERN

As is well-known, countries of the world without health insurance in some form are greatly in the minority. The schemes vary from country to country, some being better than others. As a general statement it is exceedingly difficult to obtain alterations in a scheme once it has been introduced. For these reasons we have been greatly interested for some years in investigating the various existing arrangements for dental services in other countries. Herein it is only possible to mark a few points in a general manner.

Undoubtedly, the two most important overall points are, first, the freedom of the dentist to practice his profession and second, the economic position of the dentist in society. Both these subjects are of serious concern not only to the dentist himself but to the dental health services rendered the public under any scheme. The investigator of such schemes in other countries becomes seized with their importance. What are some of these fears or disturbing points? I shall deal with a few of them.

1. *Conformity* — Recently the president of a large corporation said "Anytime I have two men who think alike, I can do without one of them". By his whole training a dentist is taught to stand on his own individual feet. This individuality makes for progress and is the keystone to improvement of quality of service. Nothing could be more abhorrent to the

true professional man than to be handed a book of rules and told that in future this is your way of practice. Such a situation is so foreign to a Canadian dentist that it appears impossible but it can and does happen under health schemes. Freedom in practice leads to advancement in all phases of practice. Conformity makes for a downward path reducing the quality of services.

2. *Stagnation* — Evidence is to be found that progress in dental science can be inhibited by the type of regulations adopted for controlling a health insurance scheme. Once regulations are in force it appears extremely difficult to obtain alterations, no matter how detrimental those regulations may be. The man drafting the regulations may not be even remotely related to the services. His main interest is in controlling the expenditures while the interest of the man performing the services is in furnishing a reasonable service to his patient. These motives may be widely different in result. The situation may become so bad that progress is impossible. One European dentist said to me last summer "There is no real reason why I should attempt to learn anything new. If I did, the regulations would not permit me to use my new knowledge. And further a year's effort in attempting to obtain a change in the regulations would likely end in failure."

3. *Divided Authority* — The Canadian dentist is wholly responsible for what he does, legally and otherwise. He is trained to accept this responsibility and in our opinion this is the position he should occupy. Such responsibility makes for good service. Complicated arrangements are to be found in health schemes which in my opinion greatly interfere with this position of responsibility. For example a dentist agrees to accept a patient for services. He records a diagnosis on the prescribed form and mails it to the authority for approval. The authority, perhaps in the person of a lay clerk, alters the diagnosis to conform with a set of rules and returns it to the dentist stamped ap-

proved. The dentist is in the position of performing the services in accordance with the approval. The question arises as to who is responsible for the prognosis. This is an iniquitous system which results in services to fit regulations and not to serve the best interests of the patient.

4. *Bureaucratic Control* — The administrative staff controlling the scheme for dental services can become so numerous that the members of this staff become a heavy financial burden on the scheme itself. The chief purpose of such personnel is to police the scheme. Admittedly, a minority of any sizable group will take advantage for themselves, if given the opportunity, but surely better methods of checking can be employed. A situation exists today where there is one administrative person to every eight dentists actually rendering services. These are full time personnel. In addition there is a host of part time personnel in the same capacity. Surely your reaction must be that this is ridiculous, but it is a fact. What is more the administrative staff continues to increase. From a practical standpoint it should be recognized that a specified amount of money is allotted for the dental service in its entirety. The proportion of this money supporting an enormous administrative staff contributes nothing to the actual dental services rendered for the public. All this money for administrative staff does not place a single filling in a tooth.

5. *Negation of effort* — Only one real reason supports the existence of professional associations and societies in the health field. Practically the whole effort of such bodies is concentrated on finding ways and means of improving the service to the public. In countries where health insurance exists the altered activities of associations is striking and most regrettable. They become negotiating bodies in an endeavour to obtain a reasonable dental service. Such activity leads directly into the fields of economics and politics. In neither of these areas is the dentist by his training able to function effectively. All must employ experts in an effort

to secure just rights. For example, in one European country with 4,000 dentists the dental association has three full time assistant secretaries, two of whom are qualified members of the legal profession and one an expert in economics. The comment made by the president of this association was that they waited too late. They should have had these men when the legislation was in the making.

6. *Insecurity* — This whole movement goes under the name of social security but it certainly brings insecurity to some. At times Canadian dentists complain about their economic position but they at least have control on an individual basis. According to the methods adopted in health schemes elsewhere, dentists have lost all control of their economic future. They may go to bed one night under one set of circumstances and wake up the next morning under extremely altered conditions, all of which is accomplished by the stroke of a pen. All are affected by the action. Personal economic dependence on a political basis must surely have little appeal to members of the dental profession. And yet abundant evidence exists that the vast majority may be persuaded through political promises. Perhaps the best example is in one scheme where over 90% of the dentists signed in on promises of higher levels of income. Five sudden alterations occurred in less than four years, which reduced the earnings of the dentists. This is one of the hazards of health insurance and a most difficult one to hedge against.

These and many other points need very careful study. If I have a plea to make, it is that all our organizations give intensive consideration to this important subject.

DEVELOPMENT IN CANADA

Let us look briefly at the development of social security legislation in Canada. Following the first world war the beginnings of the present trend were initiated. The second world war accentuated the trend. As a result legislation has been enacted covering old age pensions,

mothers' allowances, unemployment insurance, the beginnings of health insurance and others, for the most part during the last two decades. All these measures have been extremely popular. During the early forties we had a period of anxiety when the proposal was made to introduce a fullfledged health insurance act covering all health services. Ultimately, it was decided to delay health insurance temporarily and introduce one or two other social security measures. The decision was only to *delay* health insurance, not to discard it.

Probably, the political situation surrounding this whole subject can be stated best by quoting the statement of a well-qualified writer on the subject who was certainly in a position to know at the time. Bruce Hutchison in the *Financial Post* of February 23rd last stated "To understand what is happening in Ottawa, in February, 1957, it is necessary to go back to September 1943, when the government of W. L. Mackenzie King was at the nadir of its fortunes and clearly facing defeat in the next election. To meet that danger, Mr. King invented, or at least blue-printed for the first time, his version of the thing we now-a-days call the welfare state. His blue-print of a brave new world included many things like full-employment, universal old age pensions, children's allowances, floor prices for farmers and housing schemes which were introduced a few years later and are now commonplace. The blue-print also included national health insurance but after nearly fourteen years that final pillar of the welfare state is still missing. Evidently it will soon be installed." Here we have in a few words an accurate presentation, except that much more progress has been made toward building the final pillar of health insurance than indicated.

During the session of parliament in 1948 the Prime Minister made a most important statement on health insurance. He announced the institution of federal health grants of considerable magnitude to be utilized strictly as preparatory

steps for the introduction of health insurance. These grants were designated for health surveys, building of hospitals, training of personnel and other purposes in preparation for health insurance. A few years later special assistance was provided for the increasing of diagnostic facilities. Again as stated at the time, in preparation for health insurance. In the meantime statement was made on several occasions giving the order of the gradual introduction of health insurance services. After the preparatory steps were taken the first service to be instituted was stated to be hospital services under health insurance. This action is occurring now and right on time in accordance with the original plan. The next stated service planned to be included is medical services to be followed by dental services. The intention of the original planning is that one service be operating satisfactorily before the next service is introduced. However, experience has shown that politically anything can happen with timing lengthened or shortened.

Difficulty would be experienced today in finding any individual well-versed in Canadian health affairs who does not believe that full-scale health insurance is going to become a fact in Canada. Unless in some fashion the present trend is reversed all available evidence points to this eventuality.

WHERE DO WE STAND?

If all this be true and there appears to be no reason to doubt intention, then every Canadian dentist should be keenly interested. Political parties make little difference in their general statements on health insurance. Some difference in method of implementation would be anticipated according to the party in power. Once instituted, change of government has made little or no difference in methods employed in other countries.

Real credit can be given to Canadian government health officials in that long term planning has been the order of the day. We have not been faced suddenly with a fait accompli but the activity

moves gradually forward as witnessed in the present stage of hospital insurance. By this same token it is too late for a professional body to act after detailed plans are announced. Necessity exists for continuous study and activity on the part of dentistry if any degree of success is to be attained.

Little need should exist for relating here proposals which have been made by the profession for these have been published in their entirety from time to time. In summary, a preventive program has been presented based on dental health education, research and treatment services for the younger age groups of the population. These proposals have been favourably received *but let no one conclude that this means no other action may be taken.* Being political in nature, anything can happen and large representative groups of the population are pressing for much greater coverage.

The real crux of this whole matter lies in the detailed methods by which the plan is to be operated. The methods employed affect directly every dentist, and can alter the whole practice of dentistry. Methods of administration, methods of payment and methods of patient relationship, as I have tried to point out earlier in this presentation, can alter everything even remotely related to the dental profession.

In order to achieve a position of influence no one, government or otherwise, should be better aware of methods employed in other countries, the economics of dental practice and all matters relating to dentistry than the organizations representing the profession. In addition to accumulating such up-to-date information it is necessary that presentation be made in an acceptable form which is not work for amateurs, particularly in the legal and economic fields. Experience in the past has indicated strongly that when the matter under consideration was right and presented in proper form it was generally adopted, provided the activity was consistent and with continuity. Spasmodic effort is of little avail.

You are all aware that voluntary health insurance plans for dental services exist on this continent today and such plans are expanding in number. Strong voices still say that health services of the future can be rendered on a voluntary basis more effectively and certainly more economically than by the government. It is no longer politic to refuse the approaches of groups requesting dental services. Two things are essential before any arrangement can be negotiated: First, some form of administration must exist; and second, both the purchaser and seller of dental services must know the price. As a result of this situation, two recommendations were adopted at the C.D.A. Meeting in Winnipeg last June. One—that a non profit corporation be established in each province for administrative purposes. Second—that an acceptable fee schedule, fair to patient and dentist be established in each province. Through the operation of plans, the profession would gain valuable experience and be in control of their own affairs. If we are to obtain control of dental services under any government plan for compulsory health insurance, experience is a prime requisite. Such experience may easily prove expensive, but it is far better to learn by operating small plans that to learn our lessons in an all-inclusive permanent arrangement.

Across this country there are approximately 75 dental associations and societies of which only two exhibited any interest whatsoever in this great problem during the last year. This is a most apathetic attitude to a matter which can alter the life of every Canadian dentist. Some dentists say I will be through before this could affect me. This is an unworthy attitude for the effort is on behalf of the profession and not an individual, besides timing is unknown. A few dentists have said if we do not like it we will strike. Impossible, for this tactic has been attempted in several countries and failed every time. Even at this stage I have been rather dismayed at the number of our own members who have

enquired already respecting the best procedure in seeking a job in the new set-up. Other dentists say they will ignore it and continue as they are now practising. Perhaps they will but my answer is that there are several countries where dentists discovered too late the impossibility of doing so. It is evident that many of our members have little interest. Should not every organization in dentistry be actively engaged in attempting to make contributions toward a solution? The inevitable question is how do we do it.

Granted, little can be accomplished by simply setting up a committee unless the members of that committee are willing to do considerable background reading. Attempt has been made in these remarks to point out the great scope of the whole movement of which dental services, so important to us, in reality form a relatively small part. The judgment of any

man who is going to make a worth-while contribution depends upon knowledge of the whole and not only a small part of the subject. Study groups find it necessary to read and study the larger question before they can properly assess the position of dentistry. Of books presenting both sides of the question there are many.

I have tried to present facts on this subject as they presently exist in the belief that you should know them. However, nothing is said in an attempt to frighten in any manner whatsoever. In my opinion, and in consideration of our past experience, if we as a profession will do our utmost with the interests of the public at heart, satisfactory arrangements can be established. But a great deal of hard work is involved and all possible effort by the profession will be necessary in order to achieve such an objective.

The Impact of Ultra-High Speed on the Dental Profession

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Ultra high speeds, in the 150,000 to 300,000 R.P.M. bracket, have raised the field of Restorative Dentistry to a new plateau comparable with the introduction of the dental foot engine in its day. In spite of a comparatively short experience with the air turbine, it becomes clear that several pertinent implications relative to its use in the practice of dentistry, become most evident. It is my purpose to

explore but a few of these implications and to suggest a plausible "code of acceptance" which must become the part of every practising dentist who avails himself of this equipment.

Speed, lack of vibration and facility of cut are the first observations made by each practitioner. The low torque requires a very light oscillating touch while keeping the cutting instrument in constant motion. The replacement of the pressure-touch system, so acutely a part

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of our conventional handpiece, with a completely visual system becomes our first cognizant implication. Adequate light and excellent vision are necessary requisites for use with an air turbine.

A marked ease of cut reduces appreciably the time of operation for any given segment of dental service. In fact it is amazing to find oneself continually ahead on one's operating schedule. The interpretation and use of this time becomes significant. The dentist might adjust to this situation in one of several ways:—

- (1) It has often been said that the difference between a desirable and undesirable restoration is fifteen minutes. This being a fact, more time may be devoted to the restorative phase of operative dentistry, providing satisfaction for dentist and patient alike.
- (2) The dentist may use this time to ease what has become a much overloaded schedule. The operative field is often referred to as "the back breaker", "the hard work of dentistry", or "the bread and butter of dentistry". It is certainly desirable that the dentist will allow this modern equipment to adjust his day, week or month into segments that are more enjoyable, healthful and workable.
- (3) The dentist may increase his day with three or four more patients, thus augmenting an already heavy burden in which case he neither helps himself, his family, his community, or his profession.

Economically speaking, since a greater service per unit time is accomplished, it can be expected that the patient will wish to benefit through an appropriate adjustment of dental fees. May I say at this point, that I most earnestly adhere to the principle of a cost per hour fee schedule, adjusted when necessary to the type of restorative service provided, viz—difficulty of the operation and skill and experience necessary to provide that service. With this method, more realistic fees are obtained to the mutual advantage of dentist and patient. Geographical location offers no deterrent to establishing a fee for service based upon the dentist's basic cost per hour overhead.

The inconsistencies and inadequacies of

the "fee per surface filling" philosophy are apparent to each of us, as we view its abuses at home and within health schemes of other countries. This method cannot coexist in a profession which evaluates its dental services and not the bits and pieces of amalgam, silicate and gold "sold" in this piece-meal fashion.

It is my considered belief, that the evolution to a wide acceptance of the fee per hour concept can be admirably introduced into any practice along with the ultra high speed turbine. It is obvious to the thinking patient that the "number of fillings" accomplished per unit time, can be greater, and an unrealistic fee based upon "the fee per surface" philosophy can only foster poor public relations.

Although the great majority of operative procedures may be accomplished with this ultra high speed equipment, the dentist must be conscious of certain contraindications to its use. Among these may be:—

- (1) Any operative field which cannot be brought into full view should not be attempted with an air turbine. The disto-buccal cusps of many upper and lower third molars are typical of these fields.
- (2) Small Class III foils and silicate preparations are best accomplished with a slow engine and hand instrumentation.
- (3) Difficult of access lingual cavities on lower molars, — during which the tongue may exercise a thrust on the handpiece, are contra indicated at high speed.
- (4) Class V cavities are best accomplished with a local anaesthetic, since the thrust of the buccal musculature may provide aberrations to a normal cavity outline.
- (5) The removal of soft decay is better done with spoon excavators and a slow rotating bur.
- (6) Any area where the natural good sense of the operator suggests the use of a slower speed.

In conclusion, might I re-emphasize the necessity for each and every dentist, who avails himself of this instrument, to reassess his approach to this new plateau with a conscious "code of acceptance".

Advantages for the dentist include freedom from the former laborious cutting procedures allowing for a "break" in a crowded schedule, the possibility of better and more precise cavity preparation through ease of marginal extension and finer internal precision. For the patient—freedom from vibration, rapidly cut cavity preparations, better restorative services providing more lasting economies

in his dentistry. Greater comfort means less fear toward dental operative procedures and more dentally-conscious patients.

Lastly for our profession—a greatly enhanced public opinion so necessary for the sponsorship of any noble profession.

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The Need for Motivation Research in Dentistry

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INTRODUCTION

The demand for dental services of a clinical nature has never been greater. In the next few years it may be expected to increase well beyond the profession's ability to supply that demand. On the other hand, there is little demand for guidance in the *prevention* of dental disease, nor is there general public acceptance of those preventive techniques already established. The profession knows the proven value of these preventive measures; the public, on the whole, does not. The profession may be enthusiastic in the promotion of these ideas; the public remains passively resistant. Help in understanding and overcoming this resistance must be sought in the field of social psychology and its recent offspring, motivation research.

Recent trends indicate that the great advances of the future will be in the prevention of dental disease. The call has

been made to improve the quality and scope of dental research.^{1,2,3}

Widespread failure in the application of known preventive measures indicates an urgent need for study of the psychological factors governing public acceptance of dental health teaching.^{4,5} If the first motive of the professional man remains always to provide the best possible service to the patient, studies in the field of psychology will result in real progress. If the primary motive is any less, such studies can only lead to dishonour of the profession.

EMOTIONAL FACTORS IN DENTISTRY

Dentists, being oriented in the scientific disciplines, and trained in exacting clinical procedures, tend to ignore the fact that emotion is a far stronger human motivating factor than either knowledge or reason.⁶ Most aspects of dental practice can be examined with a view to exploring the emotional factors involved.

1. *Psychological factors in pain*

Recent essayists ^{7,8} show that some understanding of psychological mechanisms is a valuable aid in the diagnosis and treatment of dental pain. This involves understanding of the life-stress situation, and its relationship with fear, pain, and relaxation. The successful pre-anaesthetic management of the dental patient depends on the dentist's understanding of the mechanism of anxiety and apprehension.⁹ Emotional trauma can result from inadequate preparation for anaesthesia and operation. The outcome of Raginsky's prediction that psychotherapy will have a place in dentistry of the future will depend on how well we are able to resolve our own fears and anxieties. The classic injunction, "Physician, heal thyself!" indicates the necessity of looking to our own health before we can adequately help others.¹⁰

2. *Diet and Dental Hygiene*

In spite of voluminous evidence on the detrimental effects of refined sugars in the diet, on the beneficial effects of detergent foods, and of proper tooth-brushing, the majority of dentists are still not able to transmit this knowledge effectively to their patients. Jules Gilbert ¹¹ states that "action which would yield the best results in terms of dental health would come from rather radical changes in present dietary patterns." Such changes cannot come about without a thorough understanding of the intimate relation of emotion to eating habits. Research and study are now urgently needed in this field, so that we may discover the principles we must follow in convincing and motivating our patients to action. Our preaching about the effects of candy and sugar on the teeth is a waste of time, using present haphazard techniques.

3. *Dental Public Health*

Examination of trends in dental education indicate that the dentist of the future will have a more adequate background in public health objectives.¹² According to Hadjimarkos, a job of the public health

disciplines is to change habits and modes of living—by no means an easy task. Dentists trained in public health principles have a knowledge of the sociologic aspects of health education and can be of great help to organized dentistry. Their knowledge cannot be used however, without the interest and co-operation of the general practitioner.

Fluoridation campaigns, to be more successful, require more study of group behaviour, and how negative and fear-inducing factors can be anticipated and sidetracked. It may be too late to suggest that "mineralization" would be a better term than "fluoridation". Recent developments ¹³ allow the use of the mineral fluorspar as the source of the fluoride ion. There can be no argument that the ion comes from an "unnatural source". Fluoridation is a strange-sounding name; mineralization is self-explanatory and much more innocuous in the public mind.

As a result of the Supreme Court decision on fluoridation ¹⁴, in most provinces legislation will have to be enacted empowering municipalities to mineralize their public water supplies. Demand for this legislation will have to come from an enlightened electorate, motivated by a desire for better health for our children. The profession has a duty to guide the thoughts of the community in matters of public health, but without some knowledge of social psychology, either instinctive or acquired, our efforts can be abortive.

In restraining the Municipality of Metropolitan Toronto from mineralizing its water supplies, the Supreme Court based its decision on the commonly held meaning of the words "wholesome and pure" as applied to communal drinking water. As a result of research, we are having to change our concept of the meaning of wholesome and pure in this context. As was recently pointed out by Dr. Gordon Bates ¹⁵ truly pure water, as a combination of hydrogen and oxygen in specific proportions, is good for replenishing storage batteries but it is not suitable for human consumption. As a result of con-

fusing testimony on the definition of "wholesome and pure", the more obsolescent meaning was ascribed to the statute. The way yet remains open. As one of the learned Justices stated, "In view of the difference of opinion on the courts below and in this Court, it is fortunate that this is a case in which, if we have failed to discern the true intention of the Legislature, the matter can be dealt with by an amendment to the statute".¹⁸ The legislators must now be gently persuaded to amend the statute. They will only do so if the majority of the electors have been previously persuaded. In order to persuade we will need to study the motivational factors involved.

Dr. John W. Knutson of the U.S. Public Health Service has stated this clearly. 'Since prediction and hope have now been commingled, I should like to refer to the most obvious yet most elusive stars in the firmament of the future—principles of public health administration, health programme promotion and health education. I am referring of course to our basic lack of knowledge of the forces which motivate people to action in relation to health matters, or which foster doubt, indifference, procrastination and even violent opposition, based on bizarre combinations of information and misinformation. The striking similarity in frustrating experiences in the promotion of water chlorination, beginning with this century, and today's programme of water fluoridation should point up the long overdue need for basic sociological and psychological studies in this area.'¹⁷

4. *Periodontal treatment*

Gallagher¹⁸ has emphasized that inadequate home care is one of the major causes of failure in periodontal treatment. Dummett¹⁹ states that it is essential for the periodontist to know the factors which influence the acceptance or rejection of individual periodontal therapy. Parks²⁰ claims: "The dentist who achieves a high percentage of success in the treatment of periodontal disease must be a teacher at the chair, before,

during and after treatment. The dentist must not make complex what is really simple in teaching the patient his responsibility." Although we concur with the necessity for teaching at the chairside, we cannot agree that this is a simple procedure. All effective teaching is a highly skilled art; even those teachers endowed with natural aptitudes need to study the best techniques.

5. *The dentist's example*

A powerful force in the community acceptance of dental health teaching can be the example set by the dentist and his family. Any dentist who has not guided his own family to better dental health habits is hardly in a position to convince and guide his patients. If the dentist's children nonchalantly and politely reject offers of sweets "because they will make holes in our teeth", the impact on neighborhood parents is worth hours of verbal persuasion at the chairside.

THE ART OF PERSUASION

To establish good habits by teaching the young, and to persuade the voters to press for mineralization of the community water supply, are the only effective ways to improve, materially, the general level of dental health. Both ways require skill in the art of persuasion. An erudite educator, Gilbert Highet,²¹ gives three rules for effective persuasion. One, the inducement must be attractive; two, the persuasion must be gradual, and three, it must appeal to the emotions as well as to the mind. If our true objective as a profession is a happy new generation with healthy, attractive, and truly permanent teeth, then by the practice of persuasion, our objective can become the goal of all Canadians.

CONCLUSIONS

Most of us are not trained in the psychological disciplines. The need is great for understanding of the motivational factors governing dental practice, so that the efforts of the profession to improve public health may be more effective. This understanding may be gained by:

1. Study of elementary psychology in the undergraduate years.

2. Continuing post-graduate pursuit of knowledge in the social sciences, based upon sound professional ideals, and dedicated to the principle that prevention of dental disease is better than cure.

3. Dental Society sponsoring of study clubs for motivation research, led by qualified psychologists.

4. Active cooperation between university faculties of dentistry and departments of psychology.

5. Encouragement of post-graduate theses in this field.

BIBLIOGRAPHY

1. Macdonald, J. B.: A Prospectus on Dental Education. University of British Columbia, 1956.
2. Williams, C. H. M., and Wood, A. W. S.: The Present Status of Dental Research in Canada: *J. Can. D. A.*, 22: (12) 712, 1956.
3. Mather, J. M.: The Changing Picture of Professional Education: *J. Can. D. A.*, 23: (8), 453, 1957.
4. Editorial: *J. Can. D. A.*, 23(4):226, 1957.
5. Eskridge, L. J.: The Public Health Aspects of Caries Control: Methods Suitable for Education of the Public: *J.A.D.A.*, 37:428, 1948.

6. Uprichard, M.: Education for Better Dental Health: *J. Can. D. A.*, 23(4):220, 1957.
7. Borland, L. R.: Psychological Considerations in Facial and Oral Pain: *J.A.D.A.*, 53(5):539, 1956.
8. Saper, B.: Psychological Factors in Dental Disorders: *J.A.D.A.*, 56(2):223, 1957.
9. Raginsky, E. B.: Preanesthetic Management of Dental Patient: *J.A.D.A.*, 49(6):672, 1954.
10. Editorial: *J.A.D.A.*, 52(5):626, 1956.
11. Gilbert, J.: Integration of Service, Teaching and Research: *J. Can. Public Health*: 45(8):323, August, 1954.
12. Hadjimarkos, D. M.: Dental Officers in Local Health Units: *J.A.D.A.*, 55(2):241, 1957.
13. General News: *J. Can. D. J.*: 22(3):171, 1957.
14. Fluoridation and the Supreme Court of Canada — Transcript of Reasons for Judgment — *J. Can. D. A.*: 23(8):459, 1957.
15. Editorial: *Health Magazine*, July, 1957.
16. Cartwright, Mr. Justice: Fluoridation and the Supreme Court of Canada — Transcript of reasons for Judgment — *J. Can. D. A.* 23(8):465, 1957.
17. Knutson, J. W.: *J. Can. D. A.*: 225, 1957. (quotation).
18. Gallagher, J. W.: Periodontics in General Practice: *J.A.D.A.* 49(5):533, 1954.
19. Dummett, C. O.: Periodontal Diseases and Public Health: *J.A.D.A.*: 54(1):49, 1957.
20. Farks, S. R.: Patient's Responsibility in Periodontal Disease: *J.A.D.A.* 55(2):230, 1957.
21. Hight, G.: *The Arts of Living*: Simon and Schuster, New York, 1954.

A Solution to the Problem of the Lower Bilateral Free-End Saddle Partial Denture

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INTRODUCTION

For many years attempts have been made to solve the common problem of the lower bilateral free-end saddle partial denture, but most dentists are still not fully satisfied with the results. It is surprising to see in this day of technical advancement that over 90% of all such partials are still being designed as they were over thirty years ago.

We, all too frequently, have seen in our offices, our finest cases return in a few

years with the abutment clasped teeth traumatically loosened. These teeth invariably have to be extracted and new teeth and clasps added to the denture; with the occasional exception of those teeth that are mesially tipped. This common sad sequence of events has no doubt increased the patient's fear of having partial dentures made. This is not without some justification, because the dentists could not guarantee any permanence to the remaining overloaded teeth.

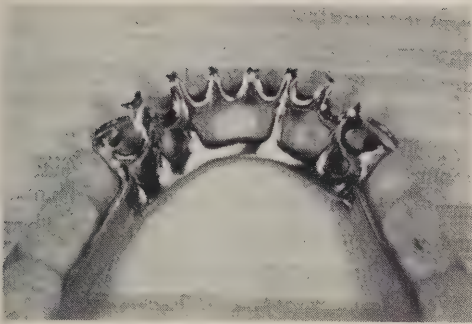


FIGURE 1

Occlusal view of a completed moveable removable partial. The round spring wires attached to the continuous lingual bar. The case can be made with the wires concealed, although patients are very comfortable with them exposed. — Notice the space between the acrylic and the casting to allow for slight movement.

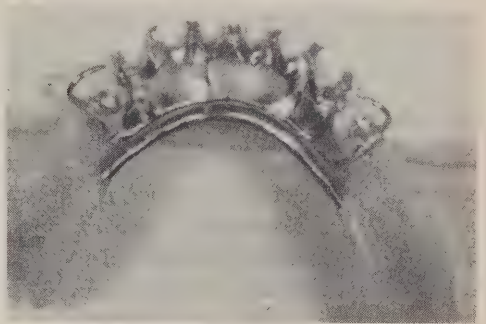


FIGURE 2

The gingival view of the same case showing clearly the separate second lingual bar, which is free to move with the saddles.

SPLINTING AND RELINING

One of the common attempts to slow down this inevitable destruction of the abutment teeth was the splinting of the last two on each side. This was an improvement in that the abutment teeth lasted longer but eventually the net result was the same.

Some dentists claimed that "regular" relinings of the case would correct for the resorption of the ridge, and would reduce the resulting excess stress on the

abutment teeth. However, clinical experience has shown that, by the time the patient returned for a relining, it was often too late and much damage had already taken place.

THE PARTIAL DENTURE "SETTLING SYNDROME"

We then find these objective symptoms, which for the sake of simplicity we shall group under the heading of a "Settling Syndrome":

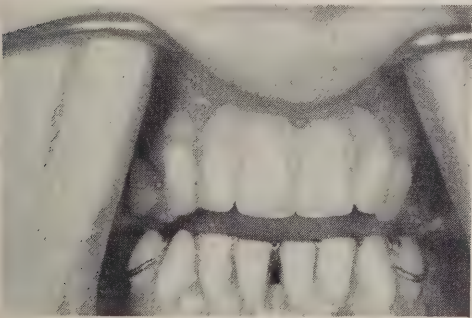


FIGURE 3

The same case in the patient's mouth, showing the small amount of metal seen from the front. The lower anterior teeth were very weak and this partial denture effectively splinted them, because the saddle areas moved separately.

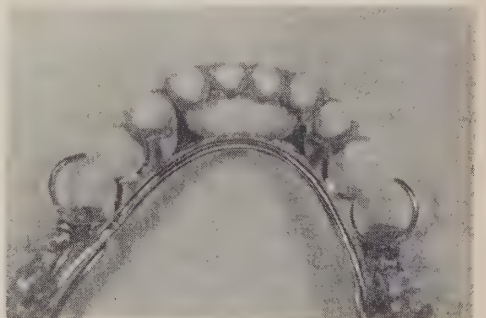


FIGURE 4

The gingival view of the framework of a similar case. Notice the two separate cast saddle frameworks are joined by the lingual bar.

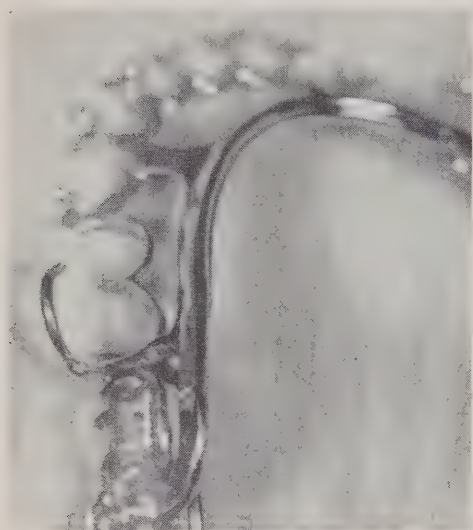


FIGURE 5

A close-up of the framework showing one of the slides, which control the direction of the saddle movements. Notice the round wrought gold clasp wire on the labial of the abutment tooth.

- (1) The abutment teeth are looser and are tender to touch.
- (2) There are usually sore spots at the buccal and lingual periphery of the saddles; there is an inflammation and impingement of the gingival tissues about the necks of the teeth in contact with the denture.
- (3) The lingual bar has pressed labially and incisally into the inflamed gingiva and the prongs of the continuous lingual bar may be cutting the patient's tongue.
- (4) The anterior teeth are in traumatic occlusion, often resulting in chipping individual tooth movements, displacement of restorations and loosening or tipping of the upper denture.

The repeated replacement of an anterior tooth for a patient who has a full upper and free-end saddle lower partial, can often be the clue to the diagnosis of this "Settling Syndrome". In such cases merely relining the partial denture will not correct the problem, a new and more correctly designed denture must be constructed.

STRESS BREAKERS

Stress breakers have for years been incorporated into this type of partial denture in an attempt to reduce the excessive strains on the abutment teeth. The name "stress breaker" itself seems to suggest the need to correct the serious faults that arise in the partial dentures which depend on the combination support of both the teeth and the mucosa. Unfortunately, all of the stress breakers available today if employed as they are prescribed by the manufacturer, are failures in one respect or another. This is the opinion of the best partial denture authorities, and is very clearly evident by the small attention given to the stress breaking problem in the three most recently published partial denture text-books.* It is time for dentists to take this problem more seriously, and not to accept these failures as inevitable. Too often the cases are constructed mechanically perfect yet biologically unsound. This will necessitate more study on the part of the dentist to understand the problem of these partial denture designs.

THE SOLUTION—BASED ON BIOLOGICALLY SOUND DESIGN

For the solution of this difficult problem we must first keep in mind that which we wish to accomplish for an ideal result. We wish to control the saddles so that under mastication they may move freely down and return to their rest positions, without offering any pressure to the ridge when not under function. We wish also to distribute the greater force of the biting pressure over as many of the remaining teeth as possible, so as not to overload any single tooth and avoid excessive resorption to the ridge. When this can be achieved comfortably for the patient, we have a biologically and mechanically designed case. These results may be obtained by modifying some of the available stress breakers with well designed springs, which will return them to their

* Austin & Lidge 1957. Swenson & Terkla 1955. Applegate 1954.

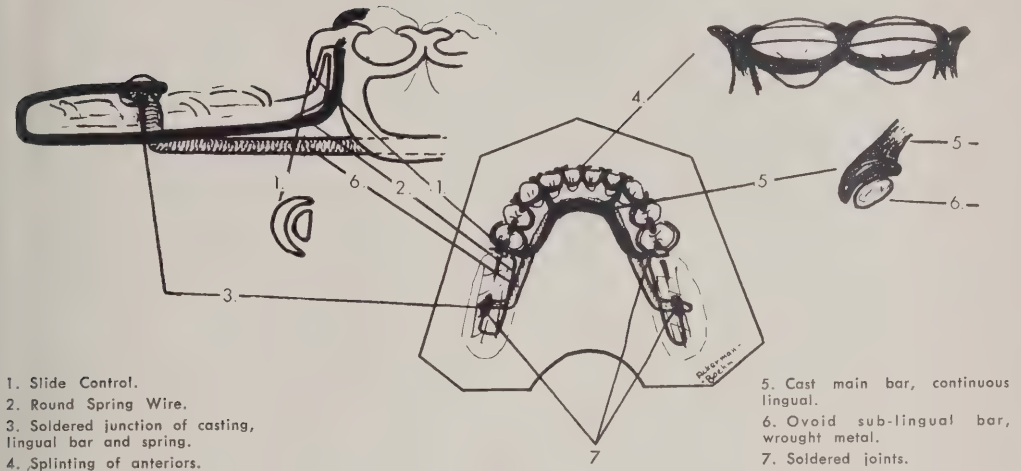


FIGURE 6

Design and Construction Details of a Movable-Removable Partial Denture.

original position after moving during chewing.

In the illustrations a design is described which we believe is a very successful solution to this problem. It's construction includes double lingual bars, slides which control distal, occlusal, labial and lingual movements, and round wire springs to distribute the pressure evenly.

ADVANTAGES

The advantages of this design are:

- (1) No one single tooth is overloaded. Loose anterior teeth can be shortened, splinted and maintained for a longer period with this construction.
- (2) The alveolar ridge resorption is reduced to a minimum; there is no settling of the denture and the opposing upper teeth do not extrude.

(3) Maintenance considerations:

- (a) Relines are much less frequent, and easier to do.
- (b) Practically no breakages.
- (c) Fewer occlusal adjustments necessary after insertion.
- (d) Easy to keep clean and very comfortable to patient.

(4) The additional laboratory cost of the appliance as compared with the conventional one is not significant.

(5) There is good control of all the movements of the denture during mastication.

We hope that our successful experience with these moveable-removeable partial dentures will be a help to all the dentists who are troubled with this difficult problem.

*168 Dundas Street West,
Toronto 2, Ont.*

At the present time the use of rotary instruments at increased operating speeds presents many more advantages than disadvantages both to the patient and to the operator. It is evident that fine operative dentistry can be done with the rotating instruments that are now available without resorting to auxiliary instruments of the non-rotating type. It seems evident that additional refinements in instruments will continue to occur. Further refinements in techniques and concepts of operation also will likely be developed. Safe and effective techniques are now available for the use of increased speeds. Finally, it is believed that so long as good, sound, basic principles are observed in the shaping of cavities with rotating instruments the choice of the instrument used for that purpose may be somewhat secondary in importance.

F. A. Peyton, D.Sc., Michigan

ABSTRACTS

Critical Analysis of Pain Incidence During 1,508 Operative Procedures with Rotating Instruments

FRED HERZBERG, D.D.S., Van Nuys, Calif.

A clinical evaluation was made of the effectiveness of the air-water spray used with rotary instruments in dental operative procedures, without local anaesthesia, in an effort to determine the pain-reducing effects of the spray. A review of the literature revealed many comments regarding the effectiveness of the spray, but no clinical case reports which actually substantiated this usefulness.

Fourteen hundred and sixty preparations were performed without using anaesthesia on 463 patients, 271 female, 192 male, aged 3 to 77 years, in the private office of the author. Their reactions were reported as "no pain" (NP), "moderate pain" (M) and "pain" (P).

Modified standard equipment was used, with a handpiece speed from 10,000 to 13,000 rpm for carbide burs and diamond stones, and from 2,000 to 4,000 rpm for steel burs, all used intermittently with light pressure. An average of 10 cc. of water per minute was delivered at a temperature of approximately 63°F.

It was found that sex, time of day and arch being worked on had no bearing on patient reaction to operative procedure.

In the preparation of 1,248 permanent teeth, "no pain" was found in 28 per cent, "moderate pain" in 60 per cent (total 88 per cent tolerable) and "pain" in 12 per cent. Deciduous teeth showed "no pain" in 52 per cent, "moderate pain" in 41 per cent (total 93 per cent tolerable) and "pain" in 6 per cent. Deciduous teeth grouped by class of cavity showed no significant differences, whereas in permanent teeth there was less pain in Class I and Class III than in Class II and Class V cavities.

The tabulation of results by tooth were inconclusive. Paired cavity preparations showed a tendency to repeat reactions in a ratio of two to one, but preparations made at various times on the same patient produced inconsistent results. The previous condition of the cavity produced no significant differences, except that those having silicate fillings gave less pain than others. Age appeared to result in a gradual decrease in the percentage of "no pain" reported and increase in the "moderate pain" category. Peaks of pain appeared to be present at from 10 to 15 years of age and 20 to 25 years of

age. Any rotary instrument, used at its proper speed with the air-water spray, is capable of producing painless or nearly painless results in the overwhelming

number of patients undergoing operative preparations without the need for anaesthesia.

The Journal of the American Dental Association
Vol. 55, No. 4, October 1957

Evaluation of Dental Caries Preventive Measures Applicable at the Community Level

GORDON NIKIFORUK, D.D.S., M.S. (III.)

The ten-year reports of controlled fluoridation of communal water supplies in Grand Rapids, Brantford, and Newburgh indicate a marked reduction in the prevalence of dental caries in primary and permanent teeth of residents ingesting fluoridated water since birth.

Beneficial posteruptive effects of fluoridated water were noted on permanent teeth.

The ten-year medical studies indicate no significant medical difference between the group that consumed water which contained 8 ppm. of fluoride compared to a group drinking water containing insignifi-

cant amounts of fluoride.

In Canada approximately one million persons are benefitting from communal water fluoridation programmes.

The clinical evidence that fluorides in a dentifrice significantly reduce dental caries is inconclusive.

Topical application of sodium and stannous fluoride to teeth significantly reduces dental caries in children. The more recent studies with stannous fluoride suggest this compound may be particularly promising in this regard.

Canadian Journal of Public Health
Volume 48, Nov. 1957, No. 11.

Voluntary Medical and Hospital Insurance in Canada

Voluntary hospital insurance plans in Canada have expanded their membership from about 3.9 million persons in 1949 to 5.9 million persons in 1953, after adjusting for duplication, or from 29 to 40 per cent of total population. In all, about 60 per cent of the 1953 population were covered for some kind of hospital benefits under the voluntary plans and the four provincial hospital care programs. Over this same period, total expenditures on hospital benefits rose from an estimated \$32 million in 1949 to \$63 million in 1953. It is estimated that about \$35 million was

spent in 1953 under service contracts, all of which were written by non-profit plans, and \$28 million was paid out under indemnification or reimbursement contracts.

Payments by voluntary hospital plans in 1953 are estimated to have represented about 40 per cent of payments to public and private hospitals, either by patients directly or on their behalf by the voluntary plans, or about 24 per cent of total payments to such hospitals from all sources.

Research Division, General Series No. 9,
Dept. of National Health and Welfare,
Ottawa, August 1955.

Prophylactic Orthodontics and Tooth Guidance

M. MICHAEL COHEN, D.M.D.

Neglect of the primary dentition is the principal cause of malocclusions in the permanent dentition. Early, regular, and satisfactory dental care will help maintain the primary teeth in a healthy condition until the time for their normal exfoliation.

Tooth loss in the primary dentition, particularly the molars involving the proximal surfaces, should be restored to the full mesiodistal diameter for the prevention of space loss and the maintenance of arch length.

The maintenance of arch length in the primary dentition is essential for normal occlusal relationships of the permanent dentition.

Appropriate space maintainers should be provided for prematurely lost primary molars.

Habit reminders for pernicious oral habits with associated dentofacial deformities in the late primary and early mixed dentition will aid in the discontinuance of the habits.

Anterior and posterior crossbites in the primary and permanent dentitions should be corrected as soon as they are recognized.

Many severe dentofacial deformities in the primary and early mixed dentition which impede growth and development are indications for early orthodontic treatment.

The objectives of prophylactic orthodontics and tooth guidance should be kept constantly in mind, that is, to prevent something bad from getting started and to prevent something bad from getting worse. To accomplish this the practitioner of prophylactic orthodontics must have a knowledge of dental and dentofacial growth and development, together with the ability to recognize and manage potential or developing irregularities. If the aims and maximum benefits of true prevention are to be realized it is essential that we relate our principles of practice to the young and growing child.

Illinois Dental Journal
Vol. 26, No. 12, December 1957

Finishing Amalgam Restorations

G. F. KANTOROWICZ, B.Sc., I.D.S., R.F.P.S. (Glasg.)

Investigation of the cause of failure in 1521 defective amalgam restorations showed that:

1. 56 per cent were caused by defective cavity preparation.

2. 40 per cent were caused by faulty manipulation of the amalgam or its contamination at the time of insertion.

3. 1.2 per cent required replacement

because of morbid effects on the pulp and/or the periodontal tissues. Abnormal proximal contour and cervical excess came into this category. The remaining 2.8 per cent were probably due to unclassifiable causes.

Another investigation of 274 amalgam fillings involving a proximal surface showed that 89 per cent were faulty on the proximal surface. Some had faulty

contour, some faulty contact, and most of them had an excess of amalgam at the gingival margin. According to Easton most of these faults could have been prevented by the correct use of matrix bands.

Faulty adaptation of a matrix band only too often leads to an excess of amalgam at the cervical margin. This can sometimes be removed with a concave flame-shaped finishing bur or a small fissure bur, or by the use of hand instruments. More frequently, however, the only means of rectifying these faults is removal and replacement.

If, after the removal of the matrix band, a contact area has not been achieved, the filling should be removed, preferably before it has set, and the matrix band modified before being re-applied, or a different type of matrix band selected. In the case of very wide cavities, it may

be permissible to leave the amalgam to set, and after at least 24 hours a new cavity can be cut in the proximal part of the amalgam filling, leaving some old amalgam at both the buccal and lingual cavo-surface angles. A good undercut and occlusal dovetail is necessary for this. But if the cavity is not sufficiently wide, the operator may be left with an abnormal bulge constituting the contact area. This will only lead to an early fracture of the filling. The addition of little pieces of amalgam to the filling in order to restore the contact area is bad practice. This will only produce a contact area which is too high and weak.

Food impaction, if not caused by the absence of a contact area, is often caused by the absence of a marginal pit or marginal ridge.

The Dental Practitioner and Dental Record
Vol. VIII, No. 3, November 1957

Ultrasonic Cavity Preparation

CARL R. OMAN, D.D.S., New York

Extensive study of cavities prepared with the ultrasonic dental unit during the past three years (1954-1957) has produced convincing evidence that the instrument is as safe as any other conventional instrument for routine office use. The original observations regarding safety made at Columbia University (June 1954) have since been corroborated by five widely separated dental research groups working independently in university, Armed Forces, and hospital research centres.

Intensive clinical use has proved that the ultrasonic dental unit can be used routinely to complete every type of preparation for which restorations must be

constructed with a minimum of pain and annoyance to the patients.

The special nature of the ultrasonic cutting process makes it possible to obtain intricate cavity forms with a minimum of effort, and the cavity walls are smooth.

The elimination of rotary motion also eliminated all possibility of lacerating soft tissue, and the use of an air-water-abrasive cutting mixture removes all possibility of overheating the tooth and injuring the pulp. These safety factors make it possible for the operator to work without tension or fear and significantly reduce the patient's apprehension.

The Journal of the American Dental Association
Vol. 55, No. 6, December 1957

EDITORIAL

Professional Liability Insurance—A Requisite

It has been repeatedly stated that there is only one sure method by which a dentist can avoid being sued for malpractice and that is not to practise dentistry. If, however, a dentist wishes to fulfill the role for which he has been meticulously trained, and if he desires to provide for his livelihood and that of his family, he can certainly not afford the luxury of such an indulgence in self-preservation. He should, however, so conduct himself that the liability hazard is reduced to a minimum.

There can be serious consequences arise from an inattention to those normal or expected practices which are coincident with the provision of a high standard of dental care. Failure to employ accepted methods, failure to record and maintain accurate records, failure to follow proper procedures when faced with those almost inevitable professional difficulties which sometime or other involve all practising dentists, may result in significant professional consequences.

We are concerned that, in Canada at the present time, only three provinces share the benefits of provincial protective associations. Obviously there are very cogent arguments which may be advanced to support the contention that a national protective association should be developed in order that it may be feasible for provinces with a small membership to join with those of larger numbers. That seven provinces do not

possess protective organizations is hazardous, not only to themselves but to the other three who, when faced with litigation in their respective provinces, may be judged on the basis of persuasive precedents established elsewhere. This contention however, is the subject for another time.

At the moment we are troubled because such an inordinately large number of dentists either do not possess professional liability coverage at all, or do not have adequate insurance in view of current trends. Admittedly our evidence to make this statement is scanty, but is, nevertheless, sufficiently persuasive to give more than a little support to our view.

Recently a survey was conducted in Ontario in an attempt to determine the extent to which that province's dentists avail themselves of professional liability insurance. Approximately 2400 questionnaires were mailed and 1561 replies were received. Of these, forty were considered not applicable because the respondents were not in active practice. While it certainly would have been desirable to hear from all dentists on this most important question, perhaps we should be reasonably satisfied with the approximate sixty-five per cent response. One, however, may be forgiven for wondering why thirty-five per cent of Ontario dentists were reluctant to expend the few seconds required to complete the questionnaire, in view of the fact the information thus

to be obtained was to be utilized in establishing a plan to benefit the profession. Apathy is a formidable opponent to progress.

Of the 1521 pertinent replies, 825 dentists indicated they carried professional liability insurance — 696 said they did not. A large percentage indicated that the terms of their policies did not include their nurses.

Some 594 dentists had a limit of liability less than \$25,000.00, an amount considered by most informed underwriters to be a minimum, and therefore only twenty-eight per cent of those who reported coverage could be deemed to have acquired sufficient protection.

While trends were not too evident it is interesting to note that on the basis of an overall 1521 replies, approximately fifty-five per cent possess professional liability coverage while forty-five per cent do not. If we consider the responses from graduates subsequent to 1940 we find that approximately sixty-three per cent have liability coverage and thirty-seven per cent are not so protected. For those replies from graduates between 1920 and 1940 we discover that less than one-half are covered, only forty-eight per cent.

There seems to be an area in the professional liability field for group coverage, and the profession was asked to indicate its interest in the possible development of a group plan. An overwhelming 1406 or ninety-three per cent,

gave evidence of interest in this possible development while 115 or seven per cent indicated either a lack of interest or a desire to participate independently.

Whether or not these figures are adaptable to other provinces is a matter for conjecture, but it would seem that a sufficiently high percentage of Canadian dentists replied to this questionnaire (23 per cent) to permit, at least, educated guesses.

It is highly unlikely that any Canadian dentist who owns his home and its furnishings does not have these possessions covered by fire insurance. We submit that the potential for liability problems is greater than the risk of fire, and therefore we find it difficult to understand why so many dentists have paid scant attention to the protection of their professional reputations. Obviously, considerations must go beyond the payment of claims because as the underwriter has a financial concern in any instituted action, his resources will be brought to bear in resisting the claim. This assistance from the underwriter often proves of great value to the dentist being sued.

The practice of dentistry, because of its essential surgical character, is replete with potentialities for malpractice suits. The possession of adequate professional liability coverage can serve not only to mitigate the effect of any untoward occurrence but will help prevent the continuance of many instituted actions as well.

Canadian Orthodontists

The new issue of the "Orthodontic Directory of the World" will be going to press in the near future.

Any qualified full time, or part time, Orthodontist who wishes his name included in the new issue is invited to write for application forms to **Dr. W. H. Oliver, Editor, Orthodontic Directory of the World, 1915 Broadway, Nashville, Tennessee.**

BOOK REVIEWS

"Oral Hygiene". 3rd Edition. Prepared by Russell W. Bunting, D.D.S., D.D.Sc., D.Sc. Published by The Macmillan Co. of Canada Ltd., Pages: 334 - 233 illustrations. Price \$7.00.

This is one of the first books written which is of specific interest to the Dental Hygienist. The text furnishes details applicable to those oral hygiene procedures which are performed by the dental hygienist, 'measures designed to minimize dental and oral disease and to improve the cleanliness of the mouth.'

The dental hygienist must be acquainted with the embryology, histology, anatomy and physiology of the oral structures. The chapters by Held, Avery and Ash present information which the hygienist should fully understand concerning structures of, and associated with, the oral cavity.

Extensive consideration is devoted to the etiology and nature of dental caries, periodontal disease and other pathological conditions of the mouth. Discussion is provided concerning the procedures which can be carried out by the hygienist to render an individual more resistant to these prevalent diseases.

Preventive measures conducive to a hygienic condition of the mouth are presented with reference made to specific studies which have been done. The measures considered therein constitute practical means of preventing and controlling dental disease. Dental caries activity is influenced by such dietary practices as restriction of carbohydrate intake. Formation of calcareous deposits is reduced when considerable quantities of harsh, fibrous foods are eaten. Hard foods exert a pronounced friction which act as an automatic cleansing mechanism. The dental caries attack rate in children is markedly less if fluorine is present in the communal water supply or if it is applied topically to the teeth. The process of dental caries can be relatively controlled by a routine and efficient toothbrushing technique. Calculus formation can be partially reduced by regular care by the dentist, the dental hygienist and by the patient. The proper use of the tooth-

brush and interdental stimulators by the patient will enhance the state of oral cleanliness.

The chapter on Oral Prophylaxis deals with instruments for scaling and special techniques for their use. The instruments and techniques proffered by the author are probably quite acceptable, but, from the aspect of efficiency and optimal care, there are techniques which to the writer, surpass those presented in the text.

Today, the keynote of health service is prevention. Dr. Bunting and his collaborators have presented source material on oral hygiene and preventive dentistry which will be useful to the dentist or the dental hygienist who is engaged in patient education either in the field of private practice or in the field of public health.

Berniece E. Quinn

Clinical Dental Roentgenology — Technic and Interpretation.

by John Oppie McCall, D.D.S., F.A.C.D. and Samuel Stanley Wald, D.D.S., F.A.C.D. W. B. Saunders Company, Philadelphia. Fourth Edition — February 1957. 466 pages, 1445 illustrations. Price in Canada \$10.00

This edition has been augmented to include recent developments such as the long cone technique, radiation hazards, high K.V.P. techniques, fast films, temporo-mandibular joint, and cephalometrics.

It is interesting to note that of the 466 pages, over 140 are devoted to technique. This impresses one with the importance the writers attach to the production of a satisfactory x-ray picture.

This is an excellent text book for the undergraduate and a reference for the practitioner. It involves many aspects of dental practice, including treatment. The bibliography is very extensive but would be more valuable if specific references were made.

On page 385, under the heading of Maxillary Sinusitis appears the statement, "If examination of the teeth is negative (as determined by clini-

cal tests, intra-oral examination, and *so forth*) the patient should be referred to a rhinologist for treatment." Such loose wording implies a careless approach to diagnosis, whereas the authors outline elsewhere their meticulous procedures.

Clinical and radiological aspects of dental diagnosis have been well co-related. One can not help thinking that the book would be improved by using the simple title, *Oral Diagnosis*.

There is no hesitancy in recommending this book to student, practitioner, or post-graduate. The 1445 illustrations are on the whole excellent, well explained, and well integrated with the text.

Henry A. Thompson

"Oral and Facial Cancer". By Bernard G. Sarnat, M.D., F.A.C.S., and Isaac Schour, D.D.S. Ph.D., Sc.D., Second Edition. The Year Book Publishers, Inc., 282 pages profusely illustrated. Priced at \$8.50.

Any book which urges early recognition and treatment of cancer and which provides methods for this process is valuable. This text furnishes the dentist and the physician with considerable information which is essential to the recognition and treatment of cancer of the mouth and face.

It is this reviewer's opinion that the extensive review of anatomy and physiology of the various parts and tissues of the mouth may be somewhat tedious and discouraging to the reader. It seems safe to assume that readers of this text will all be dental or medical students, and dental or medical practitioners who will already have an extensive training in the anatomy and physiology of the mouth.

There are many excellent black and white photographs and line drawings. The colour illustrations suffer from being crowded six to the page.

The sections on differential diagnosis of oral

and facial lesions and on swellings of the neck are of particular value. The section on treatment of oral and facial cancer indicates the various methods and particularly describes the role of the dentist in care of the cancer patient.

C. H. M. Williams.

"Oral Medicine". By Lester W. Burket, A.B., D.D.S., M.D., Sc.D., with a Chapter on Oral Cancer by S. Gordon Castigliano, Professor of Oncology, Temple University School of Dentistry, Philadelphia. 391 Illustrations, including 40 in Colour. Third Edition. Priced at \$14.00.

This book is written by a master of this subject, and it is a masterpiece in its class.

Dr. Burket is well trained in this field and his long experience has allowed him to collect very comprehensive information and illustrations. The following is a list of the topics of the twelve main sections; General Considerations, Gingivitis, Gingival Enlargement, Fusospirochetal Disease, Metal Intolerance and Intoxication, Halitosis, Allergic Manifestations, Diseases of the Tongue and Dermatologic Diseases of Dental Interest, Diseases of the Organ Systems, Nutritional Deficiencies and Diseases of Metabolism, Specific Infectious Granulomata, Focal Infection, Dental Pediatrics and Gerodontics, Occupational Hazards in Dentistry and in Industry, Oral Cancer, Laboratory Aids in Diagnosis, Colour Atlas and Regional Diagnostic Index.

The user of this book should be able to find descriptive material concerning almost any problem in the field of Oral Medicine. Each disease or condition is described under the headings of definition, symptoms and treatment. The colour illustrations are good and they serve to assist diagnosis and choice of treatment.

It can be said, without reservation, that every dentist and physician and probably every dental student, should have a copy of this book for study and reference.

C. H. M. Williams.

CORRESPONDENCE

Licensure Arrangements

To the Editor:

The Executive of the Council of the College of Dental Surgeons of British Columbia congratulates you on your excellent editorial in the December, 1957 issue of the Journal, which reads, in part, as follows:—

"We believe it is quite possible, through suitable arrangements, for final examinations to be developed in all faculties which will serve the requirements of both the faculties and the licensing boards operating through the N.D.E.B. This, of course, would require that the examination, if it were set by the Faculty, be approved by the N.D.E.B. for its purpose. If it were developed by the N.D.E.B., the Faculty should have its rights protected in being able to indicate whether or not the examination dealt fairly with the subject as it was covered in the course."

"After the examination has been written, it should be marked firstly by the appropriate member or members of the faculty staff and then forwarded to the appointed examiner of the N.D.E.B. Irrespective of the mark obtained from the N.D.E.B. examiner, the national certificate must be made contingent upon receiving a passing grade from the faculty."

"Undoubtedly such a proposal will present some administrative difficulties, but we cannot believe that they are in any way insurmountable. They require, essentially, co-operative understanding among the agencies participating."

Our only criticism is a constructive one, in that we feel your remarks could be given an even wider application.

It is our considered opinion that with a more imaginative approach to the important subject of clinical examination, a team or teams of examiners from the National Dental Examining Board could visit the various Canadian Dental Faculties towards the end of the final year and examine the candidates in whatever clinical procedures the Board deems advisable. Our Council feels very strongly that a more realistic assessment of a

graduate's qualifications can be obtained by clinical, rather than written examinations.

To continue on the present basis is to ignore the candidate's clinical training entirely, training which has occupied the predominant portion of his time-table in his last years at University.

W. Ross Upton, D.D.S.

Executive Secretary,

College of Dental Surgeons of British Columbia,
217 Medical-Dental Building,
Vancouver 1, B.C.

January 15, 1958.

To the Editor:

I have read with interest and renewed hope, your editorial appearing in the December issue of "The Journal". It is encouraging to learn that everyone is not satisfied that we have reached the perfect arrangement for the examination of dental students in Canada.

It is my personal belief that we should not rest until we have arrived at the point where any graduate of an *accredited* university is accepted for practise in any part of our country without further examination. A vast amount of time and effort has recently been spent securing the accreditation of our dental schools. Unless we are all now prepared to accept the fact that these schools turn out qualified dentists, then this work has little practical value.

Seldom is a worthwhile goal attained easily or quickly. It usually comes as the result of persistent effort by a few individuals who are idealists, and not satisfied with half-way measures. As a preliminary step along the way, the New Brunswick Dental Society three years ago forwarded a resolution for the consideration of the NDEB authorities, urging that the NDEB examinations be made coincidental with those of the university fourth year finals. The resolution did not meet with approval at that time. It is to be hoped that your editorial will create further interest in this important matter.

Harry B. Fleming, D.D.S.,
154 Highfield Street,
Moncton, N.B.

To the Editor:

Your editorial in the December Journal, "Li-censure Arrangements—Are They Justified" was a most noteworthy effort; a timely topic handled crisply and cleanly — I hope it bears fruit.

Yours truly,

Ewart A. Jones, D.D.S.,
271 Woolwich Street,
Guelph, Ontario.

Orthodontic Directory

To the Editor:

As Canadian Editor of the Orthodontic Directory of the World, I am anxious to have the names of all qualified, full time, or part time, Orthodontists included in the Canadian section of the next edition, going to press this summer.

I am sure the best way to reach all those interested would be with a notice in our National Journal.

As you probably know, this directory is entirely a non-profit proposition, and is issued chiefly so that Orthodontists will know where to refer unfinished cases which are leaving their area. Investigation of qualification is always made, and no one without adequate training will be listed. No charge is made for a listing. A nominal charge is made for a copy of the directory if it is desired.

The editors-in-chief are Drs. Oren and William Oliver of Nashville, Tennessee. I have been the Canadian Editor for some six years, and my predecessor was Dr. Vernon Fisk of Toronto.

Very sincerely yours,

B. Dixon, D.D.S.
Medical Arts Bldg.,
Ottawa, Ontario.

Questions Operation of Air Rotor

To the Editor:

In reply to a letter published in the December issue of the Journal by Dr. Lionel Metrick, I wish to make the following comments.

As to Dr. Metrick's enthusiasm for the operating facility of the Borden Air Rotor, I subscribe one hundred percent. However, to his suggestion in allowing the controls of this instru-

ment to become a part of the entertainment of his juvenile patients, I can only emphatically suggest that the control of speeds in the 150,000 to 250,000 r.p.m. range belongs in the hands of a conscious, alert, and trained practitioner. The child is in no position to fulfill this function.

Our profession at last has a wonderful new cutting instrument. Let us not desecrate its use through abuse.

Yours truly,

J. D. Purves, D.D.S.
170 St. George Street,
Toronto 5, Ontario.

Takes Exception to Book Review

The following letter was received in company with a most favourable review from Zahnärztliche Rundschau in respect to Mr. Southwood's text "A Dentist's Compendium." A review of this book appeared in the October 1957 issue of The Journal and it is with this review that Mr. Southwood takes issue.

To the Editor:

. Dr. Reid's (review) was a discouraging (one). His judgment may be open to doubt, as evidence the enclosed by a German quite unknown to me. Dr. Reid's diatribe is no encouragement to those who wish to give something to others, of their long experience. To mention but two items, the root treatment described is 100% successful, and the Baldwin Amalgam technique axiomatic.

Notwithstanding Dr. Reid's unkind description, I will look forward to the next Canadian publication sent me for review and do my best to give the author every encouragement.

It is a disturbing thought that one review came from an ex-enemy and Dr. Reid's from that part of our Empire whose Vimy I shared 40 years ago.

Yours faithfully,

S. Southwood,
91 Hamilton Terrace,

December 27, 1957. London, N.W.8. England.

While it is the writer's inalienable right to register his disagreement with the content of the Journal's review, the fact that England and Canada were allies in a world struggle many years ago is not, in our view, particularly pertinent. Surely professional and/or scientific opinions expressed in the literature can be criticized irrespective of the geographic location from which such opinions emanate. Book reviews would lose any possible value if the reviewer were circumscribed by any considerations other than the merits of the material presented.

EDITOR

THE ASSOCIATION

B.C. Accepts N.D.E.B. Certificate

Notification has been received that the following resolution was adopted at the November Council meeting of the College of Dental Surgeons of British Columbia:

"MOVED . . . that we accept for registration in the College of Dental Surgeons of British Columbia, National Dental Examining Board certificate holders without further examination, providing they commence continuous practice in British Columbia within ten years of graduation."

This action means that holders of N.D.E.B. certificates (within ten years of graduation) will be able to register for license in British Columbia without a further clinical examination as has obtained in the past.

The recognition given the N.D.E.B. certificate in clearing this obstacle is most gratifying and the B.C. Council is to be congratulated. Such action strengthens the national examining board and is a forward step for the profession.

Senators Speak on Health Insurance

Hon. Joseph A. Sullivan M.D., of North York, Ontario spoke at length on this subject in the Senate, November 27th last. In reply, Senator David Croll, Toronto-Spadina, said, "You can count this fight against national health insurance as lost. My advice is to stop struggling and join us."

The first three steps planned by the previous federal government, and generally accepted as imminent, are hospital care, medical care, and dental care. We quote Senator Sullivan here because of the importance to dentistry of the whole subject of health insurance:

Sen. Sullivan: "The medical profession as a body, united in action, cries out 'halt'. . . . This problem is solely one for the medical profession. Certainly we ask . . . help . . . but not direction control, and

administration. The criterion of medical care is excellence, but ambitious people would make it equality, under state control.

The abolishment altogether of a compulsory sickness scheme once established, even if bankrupt and unsatisfactory, is beyond imagination. . . . All the proponents of compulsion can promise honestly is some care for everyone . . . but accompanied by a qualitative lowering of the level of medical service for the vast majority.

As a class, the beneficiaries receive at best with the left hand what they lose with the right. . . . The most dangerous delusion entertained by the public is that one can get something for nothing from the government.

If more public action is deemed necessary in the field of public health care, serious consideration should be given to a comprehensive, nation-wide plan for catastrophic coverage. This could well embrace medical and dental care. . . . It is my firm conviction that future financial assistance by the federal government should be directed only to the areas in which the individual is generally unable to help himself, to the indigent, the aged, the chronically ill, and to those who suffer catastrophic medical expenses."

It is interesting to note the remarks of Sen. Croll in reply, remarks which represent a widespread attitude: "There is no way of knowing exactly what it will cost The best way to find out is to go ahead with the program and meet the situation as it arises."

Manitoba M.P. on Health Insurance

In a recent newspaper column F. S. Zaplitny, CCF member for Dauphin, Man., presented his party's attitude on this important subject.

"My colleagues in the C.C.F. and I intend to press forward for the introduction eventually of a complete national health plan for all Canadian citizens in which not only hospitalization will be provided but also medical care, dental care, and optical care We are anx-

ious that at least the first step be taken as soon as possible, that of providing hospitalization in order to lay the ground work for a complete National Health Plan in the future."

Vancouver Approves Fluoridation

By a good margin, Vancouver residents voted to fluoridate their water supply. Unfortunately, no immediate effect will be evident because Vancouver is one of 14 members of a metropolitan area drawing water from the Greater Vancouver Water Board. Neighboring municipalities must also approve the measure but none has yet agreed to a plebiscite.

Supporters of fluoridation were well pleased with the vote. Only a year ago, Vancouver City Council refused to allow a plebiscite on fluoridation.

"Fluoridation Safe" — A.M.A.

The American Medical Association's House of Delegates recently reaffirmed its position, adopted in 1951, that fluoridation of public water supplies is a safe method of reducing tooth decay. The action, taken during the association's 11th annual clinical session in Philadelphia, marked the culmination of "an exhaustive new study" by the AMA Council on Drugs and Council on Foods and Nutrition.

In its new resolution, the AMA House of Delegates described fluoridation as a "safe and practical method for reducing the incidence of dental caries during childhood."

The AMA further declared, "this new study and its findings, while more exhaustive, are essentially the same as the report of the same two councils which was made in December 1951. Since then many studies have been made, many observations have been recorded, and many opinions have been expressed."

Assistance to Dental Students

The College of Dental Surgeons of the Province of Quebec, meeting in November last, voted the sum of \$25,000 to be loaned to students of Dentistry after they

have completed their second year of studies in a dental faculty.

Fluoride Pills for Hamilton Mothers

Hamilton, Ontario, Board of Health has approved a plan to supply fluoride pills to expectant mothers through pre-natal clinics in the city.

Dental Students' Register

The latest issue of this publication, for 1957-58, follows. In it some interesting facts are revealed, particularly:

Enrolment — While the increase is slight, there is in attendance the highest number of dental students since 1950-51.

Graduate Students—Enrolment of these students has fallen to the lowest figure for several years.

Dental Hygiene—Only one small class exists, a regrettable fact: Increased teaching facilities will enlarge the Toronto class in the near future, but other classes should be established.

Graduates—The total number of graduates during 1957 was 186. This number will not improve the ratio of dentists to population in Canada.

Home Provinces—514 or approximately 65% of dental students originate from Ontario and Quebec. These two provinces represent 62.8% of the population of Canada.

United States—44 Canadians are enrolled in American dental schools. 20 of these students are from British Columbia. In reverse, there are 49 Americans attending Canadian dental schools.

Costs—Estimated costs for the four year dental course are reported for the first time in Table X.

Advanced Standing—33 students with advanced standing are in attendance this year. 21 of these students are at Toronto.

Applicants—According to information received, the number of qualified applicants to the dental schools was lower last fall than for previous years. It is indicated that activity in recruitment by the profession at large is desirable.

Canadian Dental Students Register*

as Reported by the Deans of

Canadian Dental Faculties

October 15th, 1957

TABLE I
ENROLMENT—1957-58 Term

	UNDERGRADUATES							OTHER STUDENTS				
	Fresh- men	Sopho- mores	Juniors	Seniors	Men	Wo- men	Total	*Gradu- ate	†Post- Gradu- ate	‡Occa- sional	Dental Hygiene	
											1st yr.	2nd yr.
Dalhousie . .	13	11	13	16	52	1	53					
McGill	34	34	38	35	137	4	141			1		
Montreal . . .	39	48	42	47	175	1	176		10	1		
Toronto	80	79	75	76	293	17	310	3	14	40	11	14
Alberta	28	26	24	29	105	2	107					
Total	194	198	192	203	762	25	787	3	24	42	11	14

*“Graduate” refers to dental graduates registered in the Graduate School of a university, proceeding to a degree.

†“Post-Graduate” refers to dental graduates registered in a dental faculty proceeding to a degree, diploma, or certificate.

‡“Occasional” refers to dental graduates registered in a dental faculty for courses of varying duration not proceeding to a degree, diploma, or certificate.

TABLE II
RECORD OF UNDERGRADUATE ENROLMENT—1940-1957

	Dalhousie	McGill	Montreal	Toronto	Alberta	Total
1940-41	31	58	104	210	51	454
1941-42	25	61	118	232	49	485
1942-43	25	67	139	270	53	554
1943-44	22	67	154	255	24	522
1944-45	28	51	162	264	34	539
1945-46	27	73	184	180	54	518
1946-47	38	111	188	340	108	785
1947-48	37	127	208	435	115	922
1948-49	41	146	224	478	123	1012
1948-50	48	147	225	478	136	1034
1950-51	48	145	196	380	114	883
1951-52	49	145	140	300	121	755
1952-53	50	141	111	294	123	719
1953-54	50	142	98	299	118	707
1954-55	48	138	130	313	119	748
1955-56	47	136	161	310	115	769
1956-57	47	137	184	305	112	785
1957-58	53	141	176	310	107	787

TABLE III
TOTAL NUMBER OF GRADUATES—1940-1957

	Dalhousie	McGill	Montreal	Toronto	Alberta	Totals
1940.....	12	13	23	56	13	117
1941.....	7	18	14	45	13	97
1942.....	8	9	31	40	32	120
1943.....	11	26	18	103	8	166
1944.....	6	12	37	61	24	140
1945.....	8	13	30	58	7	116
1946.....	0	5	41	56	0	102
1947.....	10	18	36	75	10	149
1948.....	9	15	38	24	13	99
1949.....	6	34	45	75	20	180
1950.....	11	36	42	168	49	306
1951.....	12	37	69	152	25	295
1952.....	12	36	55	85	27	215
1953.....	14	34	20	75	35	178
1954.....	14	37	20	69	32	172
1955.....	13	35	19	78	29	174
1956.....	13	33	20	76	26	168
1957.....	11	29	34	78	34	186

For the Year 1957

	Male	Female
Dalhousie University.....	11	0
McGill University.....	29	0
University of Montreal.....	34	0
University of Toronto.....	76	2
University of Alberta.....	33	1
Totals.....	183	3

TABLE IV
DISTRIBUTION OF UNDERGRADUATE STUDENTS BY HOME PROVINCES
AND FOREIGN COUNTRIES

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	United States	British West Indies	Netherlands W. Indies	Bermuda	British Guiana	Hong Kong	Australia	Great Britain	Totals
Dalhousie University.....	8	3	19	11	2			4		2	2	1						5	53
McGill University.....	2		1	2	53	16	3	4		7	44	6	1	1		1			141
University of Montreal.....		2	1	7	158	4		1			3								176
University of Toronto.....					1	280	11	6		7						1	3	1	310
University of Alberta.....							7	20	55	24					1				107
Totals.....	10	5	21	20	212	302	21	31	55	40	49	7	1	1	1	2	3	6	787

TABLE V
A—PERCENTAGE OF CANADIAN DENTAL SCHOOL STUDENTS FROM EACH PROVINCE
B—RATIO OF STUDENTS TO POPULATION OF HOME PROVINCES

Home Province	Percentage	*Ratio
Newfoundland.....	1.40	1/38,727
Prince Edward Island.....	.76	1/16,500
Nova Scotia.....	2.67	1/33,952
New Brunswick.....	2.67	1/26,905
Quebec.....	26.93	1/22,443
Ontario.....	38.37	1/18,616
Manitoba.....	2.67	1/40,952
Saskatchewan.....	3.94	1/28,355
Alberta.....	6.99	1/21,091
British Columbia.....	5.08	1/37,175
Canada.....		1/21,078
Other Countries.....	3.42	

*Population figures used were supplied by the Dominion Bureau of Statistics, as of June 1, 1957.
Note: Students from Canada attending dental schools in the United States have not been included in computing this table.

Canadians enrolled in American Dental Schools:	
Alberta.....	6
British Columbia.....	20
Manitoba.....	4
New Brunswick.....	3
Ontario.....	7
Quebec.....	1
Saskatchewan.....	3
Total.....	44

TABLE VI
PRE-DENTAL TRAINING OF UNDERGRADUATES

	2 Years	3 Years	4 Years	Canadian Degree		Degree From Outside Canada	
				Bachelor	Other	Bachelor	Other
Dalhousie.....	19	4	—	23	—	4	3
McGill.....	25	17	1	59	1	34	4
Montreal.....	—	—	—	165	2	7	2
Toronto.....	230	11	2	43	2	—	22
Alberta.....	63	17	16	10	—	1	—

TABLE VII
GRADUATES WITH PRIOR BACHELOR'S DEGREE

Class of 1957	Total Grads	Bachelor's Degrees	Percentage
Dalhousie.....	11	6	54%
McGill.....	29	16	55
Montreal.....	34	33	97
Toronto.....	78	11	14
Alberta.....	34	9	26
Total.....	186	75	40

	Dalhousie	McGill	Montreal	Toronto	Alberta
Can students earn bachelor's degree during dental study, thus graduating with both a bachelor's and a dental degree? ..	Yes	Yes	No	No	Yes
How many 1957 graduates did this? ..	1	4	—	—	0

TABLE VIII
DATES OF ADMISSION AND GRADUATION

	1957-1958		1957-1958		Freshman Application should be filed by
	Admission	Graduation	Admission	Graduation	
Dalhousie.....	Sept. 3	May 15	Sept. 2	May 13	May 30/58
McGill.....	Sept. 4	May 28	Sept. 3	May 27	March 1/58
Montreal.....	Sept. 10	May 31	Sept. 16	May 30	July 1/58
Toronto.....	Sept. 25	May 28	Sept. 24	May 27	June /58
Alberta.....	Sept. 4	May 16	—	—	June 2/58

TABLE IX
CAPACITY PER UNDERGRADUATE CLASS

Dalhousie.....	12
McGill.....	38
Montreal.....	60
Toronto.....	65
Alberta.....	30
Total Canada.....	205

TABLE X
ESTIMATED AVERAGE COST FOR 4 YEAR COURSE

	Dalhousie	McGill	Montreal	Toronto	Alberta
Tuition.....	\$1,680.00	\$2,206.00	\$1,950.00	\$2,000.00	\$1,505.00
Instruments.....	785.00	1,000.00	950.00	1,033.83	1,150.00
Text Books.....	165.00	incl. with supplies	200.00	160.00	240.00
Supplies.....	70.00	500.00	300.00	40.00	incl. with Instruments
Incidentals.....	175.00	incl. with supplies	200.00	188.00	—
Total.....	2,875.00	3,706.00	3,600.00	3,421.83	2,895.00
Room & Board.....	2,560.00	*3,000.00	2,700-3,000	2,400.00	2,800.00

* University Residence.

TABLE XI
STUDENT ASSISTANCE

	Dalhousie	McGill	Montreal	Toronto	Alberta
Undergraduate Scholarships Available.....	Yes	Yes	Yes	Yes	Yes
Loans Available For Undergraduates.....	Yes	Yes	Yes	Yes	Yes
Graduate Scholarships Or Fellowships Available.....	No	No	Yes	No	No

TABLE XII
ADMISSION WITH ADVANCED STANDING

	Dalhousie	McGill	Montreal	Toronto	Alberta
Will admit Graduates with advanced standing from outside Canada.....	Yes	Yes	Yes	Yes	Yes
Number of Present Undergraduates in this Category.....	6	3	1	21	2
Number of these Students from:					
Australia.....				3	
Austria.....				1	
Germany.....				3	1
Greece.....		1			
Hong Kong.....				1	
Hungary.....				2	
Latvia.....				6	
Lithuania.....	1	2			
United Kingdom.....	5			2	1
Yugoslavia.....				3	
Canada (with French Dental Degree).....			1		

COMMITTEES AND COUNCILS

Research

It is generally very difficult to measure the relative value of the various duties performed by a committee. This is not as true with the Research Committee as it may be with others, because it seems clear that of all its duties, the allocation of funds for studentships and the promotion of the studentship programme holds the most significance in terms of the future effect on dentistry in this country. Studentships are distributed from funds granted annually by the Canadian Dental Association, to applicants who are well qualified academically and who desire to prepare themselves for a future in teaching and research. Under the terms of the regulations governing them, studentships cannot be granted for the purpose of training a man to become a specialist in any field in dentistry.

In view of the imminent increase in number and in size of Canadian dental schools, the studentships are assuming even more importance as one of the few and, therefore, vital sources of funds available for financing the training of teaching staff. In Halifax, Toronto, Winnipeg, and Edmonton construction is under way or plans are being prepared for either new, or larger dental schools. The impending increase in student enrolment means an increase in the number of teaching staff. The staff will be better teachers if they are also active research workers. It is expected that the C.D.A. studentship programme will play a very significant role in training these future dental teachers and research investigators.

During the summer of 1957, studentships were granted to three undergraduate dental students to enable them to work for the summer months in the research laboratories of one of the schools. This served to expand a programme begun in a limited way by the Associate Committee on Dental Research of the Na-

tional Research Council. This committee recently allocated funds for Summer Research Assistantships to be granted to academically qualified undergraduates in Canadian dental schools who were interested in gaining experience in research methods during their summer vacation period. The number of qualified applicants was considerably in excess of the number anticipated, and accordingly Canadian Dental Association studentship funds were used to expand the programme. It was generally agreed by both the participating staff and the students that the programme has proven to be very valuable indeed. Students were most enthusiastic about the training and experience they received, and, by having the extra help of the students in the laboratories, staff were able to accomplish more during the summer than they might ordinarily do. It is to be hoped that this programme will be further expanded in the future and will extend to other dental schools where active research programmes are being carried on.

Carrying on its policy of issuing reports from time to time in an effort to clarify issues which may arise, the committee has, during the past year, published the following statements for the information of the profession:

1. The present status of dental research in Canada. *J. Canad. D.A.* 22:712, 1956.
2. Statement on dentifrices containing sodium fluoride. *J. Canad. D.A.* 23:384, 1957.
3. Radiation hazards resulting from the use of dental X-ray units. *J. Canad. D.A.* 23:401, 1957.

In addition, the popular and informative brochure "Facts on Fluoridation" has been revised for the fourth time. Some three thousand copies of the earlier editions of this publication have now been distributed.

K. J. Paynter, Chairman

Auxiliary Services

For the first time in several years, this Committee has no report from any province of direct application by illegal mechanics for legislative permission to deal directly with the public. This must be considered, though, as merely a temporary respite, since, in three of the western provinces, illegal labs have organized for the specific purpose of applying for such legislation.

British Columbia: A Bill was presented to the 1956 Legislature by the illegal laboratories, asking that they be permitted to work directly for the public. The Government had already under consideration the possibility of establishing a dental school in the University which complicated the problem. Opposed also to the illegal labs was the association of ethical laboratories which, in conjunction with the Council of the British Columbia College of Dental Surgeons, opposed the proposed Bill. In view of the involved situation, the Government appointed a special committee, under the chairmanship of Dean Chant, Department of Education, U.B.C., to study the problem posed by the operations of the illegal laboratories and their relation to dentistry. Members of the committee were two representatives of the College of Dental Surgeons, two from the ethical laboratories and two from the illegal mechanics. The report, released late in 1956, is very confusing and, in the opinion of this Committee, purposely vague. The chairman apparently conceived the opinion that the problem of illegal practice was based principally on the cost to the public of denture services and the fact that technicians were not paid sufficiently for the skill required nor a comparable level with other skilled trades.

The report proposed that the two groups of technicians should find some common level for working together, that a course of training for technicians should be established under the proposed Faculty of Dentistry and the economic

condition of all technicians should be improved. The basic reasons for illegal practice were virtually ignored, i.e. that the illegal labs are concerned solely with the amount of money they can make, as was the fact that the ethical and illegal labs had no common ground for discussion. Thus, so far as any useful conclusions were concerned, the report served no purpose.

Alberta: Recognizing the impossibility, under present conditions, of the ethical laboratories in the province obtaining incorporation, the most desirable method of controlling members, the provincial Board, in conjunction with the ethical laboratories, established an accreditation plan which promises to be of considerable mutual help in minimizing illegal practice. Under this arrangement, the ethical laboratories agree to maintain high standards of service and conduct. The profession, on the other hand, agrees to patronize only accredited labs. So far, the plan is working excellently.

Saskatchewan: There is information that the ethical technicians intend to apply for incorporation at the forthcoming session of the Legislature. Saskatchewan is not bothered seriously with illegal laboratories.

Manitoba: In this province, the illegal laboratories have been operating quite openly for a number of years, yet proper evidence for prosecution was very difficult to obtain and prohibitively expensive. In 1956, the illegal labs got considerable support for a Bill which would permit them to operate openly. On the other hand, the Government had been considering the establishment of a Faculty of Dentistry in the University of Manitoba. In view of this situation, the Minister of Education asked Dr. K. J. Paynter, Faculty of Dentistry, University of Toronto, to make a survey of the requirements for establishing a dental school and of the relation of practice of illegal services by laboratories to public welfare. The re-

port presents an exhaustive review of the requirements for a dental faculty and makes certain recommendations relating to present demands for dental service and anticipation of future needs, together with proposals for the use of auxiliary personnel. With a number of these recommendations, this Committee cannot agree.

New Brunswick: Last year, the New Brunswick Dental Society asked the Legislature for certain amendments to help control illegal practice by a small group of mechanics. At the same time, these illegal mechanics also asked for legislative sanction for practice. Both Bills were

lost in committee. This year, the ethical laboratories, with the support of the New Brunswick Dental Society, presented a Bill to the Legislature for incorporation, modelled on the Ontario Technicians' Act. This was opposed by the illegal mechanics, represented principally by three individuals who, from information, have been operating for some time. The Bill, however, was passed with only minor changes but, peculiarly, with the inclusion of an over-riding clause specifically exempting the above mentioned three mechanics from the provisions of the Act.

R. A. Rooney, Chairman

THE CORPS

Colonel Carroll Retires

Colonel R. E. "Curly" Carroll, E.D., C.D., who retired from the Canadian Army in January, was born in Toronto in January, 1898. He received his early education at the University of Toronto Schools from which, in company with almost one hundred per cent of his fellow class-mates, he enlisted in 1916 in the R.C.H.A. Following transfer and appointment to the Royal Naval Air Service, he served as a Pilot on active service overseas during 1916-18 and in 1918-19 with the Royal Air Force.

While at University, Colonel Carroll became widely known for his outstanding achievements in football and hockey. Following graduation from the Royal College of Dental Surgeons, University of Toronto, in 1927 Colonel Carroll practised dentistry in Toronto. He continued his active interest in the military world with the Toronto Scottish Regiment, N.P.A.M., from September, 1922 until 1939.

In November, 1939, he transferred from the Toronto Scottish, in which he held the rank of Major, to the Canadian Dental Corps, with the rank of Captain. He pro-

ceeded overseas in January, 1940. In May, 1942, he was promoted to Lt.-Col. and appointed Commanding Officer of No. 3 Coy. C.D.C., in which capacity he saw service in Britain, Sicily, Italy and Northwest Europe. Returning to Canada in June, 1945, he assumed command of No. 23 Coy. C.D.C. at Kingston, Ont., and subsequently No. 22 Coy. at Toronto, during which time he was District Dental Officer, Military District No. 2. In October, 1946, he was appointed Commanding Officer of No. 13 Coy. R.C.-D.C., with headquarters at R.C.A.F. Station, Trenton, Ontario, until June, 1949, when he became Deputy Director General of Dental Services (Air) at N.D.H.Q., Ottawa, and promoted to the rank of Colonel in July, 1952.

Colonel Carroll's long and varied experience in the three Services during two major wars provided him with a broad understanding of the serviceman's hopes and fears at every level of rank. He was indefatigable in using this characteristic on behalf of the "Corps" and its members.

Colonel and Mrs. Carroll (and Kate) will take up residence in Peterborough, Ontario.

Promotions Announced

Army Headquarters has announced the promotions of Captains J. McGaughey and A. G. Taylor to the rank of Major.

Major McGaughey was born in Bonshaw, P.E.I., on August 11, 1915. He attended St. Dunstan's College in Charlottetown, P.E.I., attaining his B.A., and graduated from Dalhousie University with a D.D.S. in 1951. On graduation he was posted to Eastern Command and served at H.M.C.S. Cornwallis and R.C.A.F. Station, Greenwood, N.S. Major McGaughey has served for the past two years with I Field Dental Unit, Germany. Since his return he has been employed at Halifax, N.S. Major McGaughey's promotion was effective December 1st, 1957. He is married and has two children.

Major A. G. Taylor was born in Sydney, N.S., on March 29, 1924. He received his early education in that city and in Halifax, N.S. He enlisted in the R.C.A.F. in December, 1943, transferring to the Canadian Army in October of 1944, in which he served until his release in 1946. Major Taylor enrolled at the University of Alberta in

1947 and received his D.D.S. in 1952. On graduation he was posted to Western Command. Major Taylor served in the Far East from April, 1954, until February, 1955, and on his return to Canada was posted to Western Command where he has been employed with the R.C.N. at H.M.C.S. Naden and with the R.C.A.F. at Comox, B.C. Major Taylor is now serving with 35 Field Dental Unit in France. Major Taylor's promotion was effective December 15th, 1957. He is married with one child.

Attend Refresher Courses

Major S. G. Bagnall, recently of 13 Coy. R.C.D.C., was appointed on December 1st, 1957, to the Instructional Staff of The R.C.D.C. School, Camp Borden, Ont. Major Bagnall attended a refresher course in Complete Dentures at the University of Michigan in January, 1958.

Lt.-Col. G. R. Covey, now employed as Senior Operator in Quebec Command, attended a refresher course in Diagnosis and Roentgenology at the University of Pennsylvania in January, 1958.

ECONOMIC SECURITY

Some Economic Implications of the Fluoridation Decision

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist

PART 1

The testimony of Dr. A. L. Chute, Chief Paediatrician of the Hospital for Sick Children, Toronto, presented before the Supreme Court of Canada was that: "Tooth decay, by affecting the majority of people in a community, has come to be recognized by the Medical and Dental Professions as one of the major health problems of our time." ([1957] S.C.R. at 571).

Such a strong declaration in such formal circumstances emphasises that

the question of fluoridation is not an obscure technical question for dental and medical experts, but rather one with wide social and economic implications, possibly governmental as well.

Consulting the monumental Canadian Sickness Survey, 1950-51 (See "Journal of the C.D.A.", Sept. 1955 to Feb. 1956) we note a national expenditure of \$32,900,000* on dental services, or 8.8% of all expenditure on health services of any and every

kind. This alone indicates the economic importance of dental deficiencies. But going a step further, we note an average expenditure of \$26.20 per family per year. Further analysis reveals that the income class of "\$5,000 income and over" spend three times the national average, and the "\$3,000 to \$5,000", one and one-half the national average.

Since the low income group is numerically the largest, the figures clearly suggest that families in that class both avoid going to the dentist as long as possible, and then attend for only the most limited and essential treatment. These families also would, from every standpoint, be the last who would be prepared or able to arrange self-administration of fluorides for prevention of dental deficiency and disease, as has been suggested in some quarters. Thus it is one of the ironies of the present situation that those who would not have received dental care in any other way will be the chief sufferers from the legal reverse which this public health measure has received.

Yet, in large measure, this group is responsible for its own plight since—as so ably pointed out in the Editorial of the September, 1957, "Journal"—it is the failure of the public, and this section of the public in particular, to interest themselves in their own welfare which has generated a similar lack of interest in political quarters in effecting the necessary legislation.

On the other hand, the demand for national hospital insurance has evoked a widespread and vigorous public demand which has received the response of all political parties, despite the fact that it will entail expenditure literally thousands of times the cost of fluoridation. The in-

difference of the public to prevention of the troubles from which they later will clamour to be relieved would be amusing if not so tragic.

It seems not unlikely, however, that it is precisely this attitude which will bring about general fluoridation of water supplies. While dental care is not *presently* to be provided under the national health insurance plan, dental conditions are ultimately the cause of many other disorders. It seems most likely that the national health plan will produce a far greater financial burden than now is envisaged in the official estimates. When the time comes, squeezed between the upper and nether millstones of relentlessly increasing costs, and public resistance to increased premiums or taxes or both—the health plan will seek and enforce preventive measures to reduce incidence of the demand upon it: fluoridation will be a quick first step.

The justification for forcible prevention is quite logical. When a man is prepared to suffer the consequences of an act, and no one else is forced to suffer with him, he normally is entitled to do as he pleases. But when he compels others to pay for his folly—by say, sharing his treatment bills—they are entitled to step in and either prevent the event or take other action to protect themselves: If a man wants to drive a hundred miles an hour on a private road, with no one else endangered, that is his business; when he does the same on a public highway to the menace of others, the public's rights come first.

EDITORIAL NOTE:

* The 1954 Survey of The Canadian Dental Association would place this figure at approximately \$70,000,000. Taxation Statistics for the same year essentially confirm this amount.

THE PROVINCES

ALBERTA

Edmonton District Dental Society

The regular December meeting of the Edmonton District Dental Society was devoted to Dr. Sanford M. Moose, Professor of Oral Surgery, School of Dentistry, San Francisco.

In the afternoon Dr. Moose gave an illustrated lecture describing the removal of cysts and tumours from the jaws. In the conventional surgical approach to the tumour or cyst, a soft tissue flap is reflected and then a window of bone removed. Dr. Moose advocated leaving the soft tissue attached to the bone and an osteo-muco-periosteal flap reflected, bending or fracturing the bone back at the attachment. After removal of the degenerated tissue, the intact bone on the flap serves as a matrix for regeneration. Dr. Moose described an intra oral method of bisecting the ascending ramus in selective cases of prognathism using the Sloan hand saw.

Later he discussed conservative treatment of disturbances of the temporo mandibular joint, noting the great variety of causes of pathology in this area. Successful treatment depends on determining the aetiology of the disturbance but occlusal equilibration was always the first step in the treatment.

A lively discussion period showed the great interest with which Dr. Moose's presentation was received. Dr. Moose was introduced by Dr. R. Van Alstine and thanked by Dr. W. Scott Hamilton, Dean of the Faculty of Dentistry, University of Alberta. G. C.

BRITISH COLUMBIA

Fluoridation

December was the month for plebiscites on fluoridation. This year more municipalities in British Columbia voted on the matter than ever before. Nine plebiscites were held and seven endorsed fluoridation. The results have been excellent and reveal the extent of the work done by local dentists and health officials who have actively educated the people in their communities regarding

the true value of fluoridation as a public health measure.

The B.C. Dental Association Fluoridation Committee (Chairman, Dr. Jack Lewis) was set up as an advisory and co-ordinating body, and as such does not actively participate in any local campaign. Assistance was given indirectly by supplying all available material whenever requested.

In November a press-radio tour of the Kelowna fluoridation plant was sponsored. In attendance were newspaper and radio personnel from Victoria, Nanaimo and Vancouver, who visited the pumping station and the South Okanagan Health Unit to see tests made. A civic luncheon was held at the Aquatic Club with Mayor Ladd (since deceased) as chairman. All sections of the business and social life were represented. An opportunity was offered of asking all possible questions of the civic officials and of the medical health officer, Dr. D. A. Clarke, who incidentally arranged the entire tour. The press representatives were of a very high calibre, added much to the occasion, and gave excellent publicity coverage.

These centres in B.C. now have fluoridation: Prince George, Smithers, Kelowna and Prince Rupert. These centres have approved fluoridation: Vancouver City, North Vancouver District, Richmond, North Cowichan, Campbell River, Kitimat and Ucluelet.

Dental Society Briefs

The Prince George Society had a full discussion recently on important aspects of dental welfare treatment at a luncheon meeting. Dr. Julian Thorsness presided.

The Kootenay Dental Society at its fall convention had as guest clinician Dr. Ted Hackie of Kelowna, who gave much useful information on preventive orthodontics. The present officers are: Dr. M. G. Martin, President; Dr. F. A. Fergie, Vice-president; and Dr. D. A. Sinclair, Secretary.

President Tom James of the Victoria and District Dental Society was host at a get-together preceding the annual Christmas no-host dance, with 35 couples present.

Seventeen centres comprising the dentists of Burnaby, New Westminster and the Fraser Valley had a joint meeting in the

Westminster Club. Dr. Jack Chambers of the Royal City presided as host. This enjoyable evening included cocktails, a delicious steak dinner and a film on Air-Sea Rescue with commentary by Flying Officer Dunn of the R.C.A.F.

Vancouver and District Dental Society

A local boy who made good returned to his home town and delivered two splendid lectures at the January meeting in the Hotel Vancouver Ballroom. Dr. Gerald D. Stibbs practised in Vancouver until 1948, and is now Professor of Operative Dentistry and Fixed Partial Dentures at the School of Dentistry, University of Washington. He took as his afternoon subject, "Considerations for the Improvement of Cast Restorations".

In the evening the speaker was introduced in glowing terms by Dr. Walter Sproule, who said that Dr. Stibbs was endowed with a photographic mind and memory. Various types of bridge abutments were outlined in a practical discourse entitled "Fixed Bridgework". Attention to fine detail was stressed, as it was felt that in an age of high speed there was a tendency to overlook quality.

In this matter of detail, Dr. Stibbs commenced his evening lecture with a beautiful slide of Mount Rainier, followed by one of Milan Cathedral. He then showed a close-up of one of the cathedral pinnacles with unbelievable detail that took centuries to complete and that has endured for centuries. All the slides used during the day were unusually fine and were the work of Charles Schroeter, who is in charge of photography and dental anatomy at the Washington Dental School.

In developing his theme the lecturer stated that a bridge should be functional, biologically acceptable and aesthetic.

When the day was over Dr. George Darts thanked Dr. Stibbs for his informative addresses which received close attention.

D. H. M.

Dentists in Civic Office

Dr. J. N. Penzer of Langley has been elected a school trustee, Dr. W. Bruce Gordon of Courtenay an alderman, and Dr. C. E. Bradshaw of Nelson an alderman.

D. H. M.

NEW BRUNSWICK

Saint John Dental Society

The Saint John Dental Society, aug-

mented by members from the Fredericton and Moncton Societies, entertained the President, Dr. A. G. Racey, of Montreal, and the National Secretary, Dr. D. W. Gullett, of Toronto, at a dinner meeting at the Admiral Beatty Hotel on November 2nd, 1957. Dr. S. K. Wetmore, of Saint John, the president of the New Brunswick Dental Society, was chairman. Both Dr. Racey and Dr. Gullett gave excellent addresses on the current problems of National dentistry in Canada. They left the following day for Prince Edward Island en route to Nova Scotia and Newfoundland.

J. F. E.

NEWFOUNDLAND

Newfoundland Dental Society

The annual convention of the Newfoundland Dental Society was held recently in the Blue Room of the Newfoundland Hotel.

The business meeting of the convention started at 9.30 and at 11 a.m. members heard a lecture on Public Health. Mr. Don Jamieson was the guest speaker at the luncheon which took place at 12.30.

During the afternoon the dentists went to Pepperrell Air Force Base, where they attended a clinic given by Major D. V. Carmichael.

Members left Pepperrell in time to meet the President and Secretary of the Canadian Dental Association, Dr. Gerald Racey and Dr. Don Gullett when they arrived at the airport at 4 p.m.

Dr. Harry K. Brown, dental consultant with the Department of National Health and Welfare, Captain W. J. Kickie and Captain R. Carmichael of the Canadian Army Dental Corps were in attendance at the convention. A reception for the visiting dentists was held on December 4th at the Officers' Mess at Buckmaster's Field.

Local dentists in attendance were Dr. K. Obraszekoha, Dr. D. Poole, and Dr. Wilson King of Corner Brook, and Dr. McGuire of Gander.

ONTARIO

Academy of Dentistry — United Appeal

Once again the campaign for funds for the United Appeal has come and gone. At this time, we of the Academy of Dentistry, Toronto, are pleased to inform the members of the profession that there was a far better coverage of dentists than ever before. Our

objective of \$30,000.00 was almost reached — \$27,849.00 or better than 92.8 per cent.

Our sincere thanks go out to all district chairmen, team captains and canvassers who were under the able chairmanship of Dr. Vernon Fisk. We sincerely appreciate their unstinted efforts and time so freely given.

Our wish for the future years is that the response of the profession be as great or greater, as undoubtedly the need for funds will grow as our nation grows.

Please remember this next year, when Dr. Lloyd Grose will be the general chairman, by once again giving your "fair share".

E. K. H.

Academy of Dentistry, Toronto

The Annual Winter Clinic of the Academy of Dentistry took place on Thursday, November 28th at the Royal York Hotel. It was a culmination of the hard work and planning over the year, of the Winter Clinic Committee under the able chairmanship of the President-elect Dr. Wm. A. Weir. It was gratifying to see a registration of some five hundred members in attendance, and a vote of thanks goes to Dr. John Kaye and his hard working staff, including two girls from the Toronto Convention and Tourist Association, for their faultless handling of the registration of members these past few years.

The Group Clinicians under the able chairmanship of Dr. Gordon Anker, included: Drs. D. A. Boyd, C. H. Moses, R. S. Locke, E. R. W. Bilkey, F. T. Pearson, J. B. Pepper, R. A. Clappison, W. K. Shultis, C. Reynolds, E. C. Aho, J. Kreutzer, D. L. Anderson, M. E. Lucyk, D. S. Moore, Mr. G. Quigley and Mr. Terence Sheard, Q.C. Special attention should be drawn to Dr. Drexell A. Boyd of Indianapolis, Indiana, for his illustrated lecture and discussion on high speed principles, instrumentation and various types of equipment, their techniques and methods of application. This was truly a most informative and thought provoking two hours of discussion, as those fortunate enough to gain entrance would verify. Dr. Robert Locke's closed circuit telecast of his clinic, "Dentistry for the Unmanageable Child" illustrated the value of the technique of completing all necessary treatment for these cases in one sitting without psychic trauma to this type of patient.

The Table Clinics under the chairmanship of Dr. W. G. Woods proved a great attraction and included those presented by Drs.

Gordon Anker, H. J. Hellen, E. S. White, A. H. Thompson, J. J. Hemphill, D. W. Stoneman, L. Parks, H. Thompson, G. E. Sparrow, M. Buckman, A. M. Hunt, T. Bibby, R. Rapp, K. Davey, R. Fisk, D. Mitchell, J. E. C. McGowan, W. McColeman, The Crown and Bridge Study Club, Misses D. Abbott, E. Brown, P. Rowley, D. Moore and the Health League of Canada.

The Luncheon guest speaker was Dr. D. W. Gullett, with many a pertinent fact for us on a most timely subject, a plan for nationalized dentistry. This address was most effectively delivered and well received by the members.

Once again the Ontario Dental Nurses' and Assistants' Association and the Dental Nurses' Alumnae Association under the presidency of Miss Mary Graham, held their Winter Clinic Meeting in conjunction with the Academy and received greetings from the Academy President, Dr. Robert Marshall, with a special address by Dr. Albert Antoni on Oral Surgery.

Entertainment at the evening dinner hour was provided by Kathleen Stokes at the Hammond Electric Organ, who livened things up with a general sing song.

A hearty vote of thanks is extended to the Council for an exceedingly well balanced programme and it is hoped that members will show the same support in the years to come.

Members of the Academy Council for 1957-1958 are as follows: President — Dr. Robert W. Marshall; President-elect — Dr. William A. Weir; Secretary — Dr. James A. Bigelow; Treasurer — Dr. Vernon A. Herron, and Past President — Dr. Harvey Milburn.

Dental Alumni

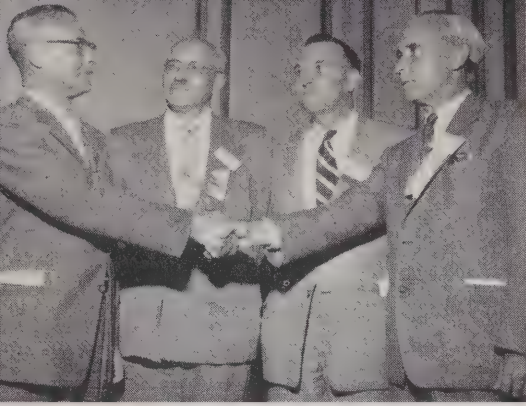
Dr. R. D. Leuty has been elected president of the Dental Alumni for 1957-58, succeeding Dr. J. M. Crawford. President-elect is Dr. H. Hunter; Dr. F. T. Pearson is secretary and Dr. William Kerr, treasurer.

Kingston and District Dental Society

Dr. Blake McAdam, associate professor in the Department of Radiodontics at the University of Toronto, presented a clinic recently to the Kingston and District Dental Society on "Silver Amalgam Restorations" and illustrated his talk with slides. A question and answer period followed the talk.

Dr. McAdam was introduced by Dr. J. P. Morgan and thanked by Dr. R. E. Werry.

The society reaffirmed its endorsement of fluoridation.



**O.D.A. PRESIDENT CONGRATULATES
E.O.D.A. EXECUTIVE**

L to r: Dr. H. A. Stewart, Kingston, President; Dr. A. Slone, Ottawa, Vice-President, Dr. W. C. G. Collins, immediate past President and Dr. F. Harold Shepherd of Toronto, President of the Ontario Dental Association.

E.O.D.A. Convention

The 81st Annual Convention of the E.O.D.A. was held at the Chateau Laurier Hotel, Ottawa, on September 22, 23, 24.

Following the pattern of previous years, a Golf Tournament was held on the morning of the 22nd. In the afternoon, the president, Dr. W. C. G. Collins, and Mrs. Collins, gave a tea party for the clinicians and guests of the Convention. It was an enjoyable affair.

In the evening the Hospitality Night was held at the Assembly Hall, Lansdowne Park. The attendance was good, and it provided an opportunity for renewing acquaintances and making new friends.

Registration started Monday morning with a better than average attendance. The table clinics too, were held Monday morning and these attracted a lot of attention, especially a progressive table clinic, given by the Ottawa Dental Society Prosthetic Study Group.

The Monday noon luncheon was a joint luncheon with the ladies, and was addressed by Dr. A. Gerald Racey, President, C.D.A.

Speakers during the Convention included Dr. Drexell A. Boyd, who spoke on "High Speed Equipment and Its Use"; Dr. N. B. Lightford, whose subject was "Cleft Lip and Cleft Palate in the Child"; Dr. S. A. MacGregor spoke on "Child Management, Practice Management", and Col. G. B. Shillington spoke on "Wrought or Cast Partial Dentures".

The exhibitors reported satisfactory interest in their efforts. The demonstrators of air-driven high speed equipment attracted a lot of attention.

The Stag Dinner closed the Convention Tuesday evening. Prizes were presented to the winners of the Golf Tournament. Steins were presented to five senior past presidents. The presentations were made by Dr. James Coupland.

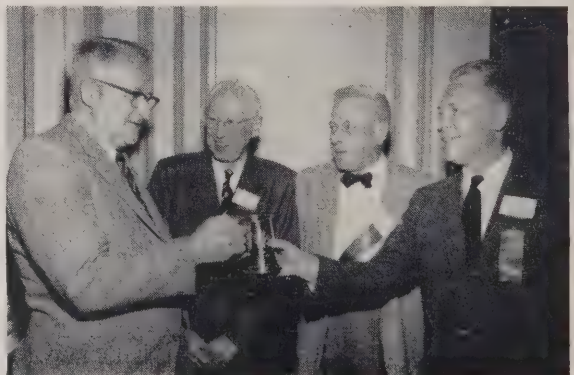
The speaker of the evening was Mr. Harry Cox, who gave an illustrated talk on "Bermuda".

Newly elected officers are: Dr. H. A. Stewart, Kingston, President; Dr. A. Slone, Ottawa, Vice President; Dr. J. D. Lyon, Kingston, Secretary-Treasurer; Dr. W. C. G. Collins, Ottawa, Past President; Dr. Lorne McLaughlin and Dr. Ira Hamilton, Auditors.

A. S.

**PAST PRESIDENTS
EASTERN ONTARIO DENTAL
ASSOCIATION**

L to r: Dr. Allan Armstrong, Dr. Stan McCaughy, Dr. Ira W. Hamilton, Dr. James Coupland, Dr. R. M. Armstrong was also presented with a Stein, in absentia.



London and District Dental Society

The London and District Dental Society held its second meeting of the 1957-58 season Saturday, December 7, 1957, at the Hotel London. Fifty-six members and guests from London and district were in attendance.

A dinner and business meeting conducted by Dr. W. H. E. Mason, Society president, was followed by the scientific portion of the programme. Guest Clinician for the evening was Dr. W. G. McIntosh, Toronto Periodontist and member of the staff of the Faculty of Dentistry, University of Toronto. The speaker was introduced by Dr. C. T. Peterson and the subject of his address was "Occlusal Adjustment by Grinding". Dr. McIntosh ably outlined in detail step by step procedures which should be followed in occlusal adjustment by the judicious grinding of the teeth to relieve damaging interferences and the overloading of individual teeth. Many excellent colour slides were shown to support the lecture material. The speaker was thanked on behalf of the Society by Dr. Geo. C. Squire.

QUEBEC

Mount Royal Dental Society

The December meeting of the Mount Royal Dental Society took place on December 3rd, and featured a panel of well-known local experts in a symposium on "High Speed in Dentistry".

The panel consisted of Dr. H. H. Pearson, Dr. P. Beaudet, and Dr. G. Dundass. Dr. Pearson in his introduction to High Speed, traced the history of the dental apparatus used in cavity preparation from the finger-drill to the various recent developments in that field, or from 100 rpm to 100,000 rpm. He pointed out that one of the principal aims of High Speed in Dentistry is the elimination of stress both on the patient and the operator. Dr. Pearson feels that the handpiece which he is using achieves this end by eliminating vibration and by its quiet, intra-oral operation. This is accomplished due to the fact that his handpiece is belt-driven right down to the bur tube. The extra-oral noise of this arrangement does not seem to disturb the patient.

Dr. Beaudet then presented his experiences with the Cavitron. He emphasized the point that the Cavitron achieves its goal of making dentistry more comfortable for the patient by eliminating rotary cutting altogether. It relies on a water-borne stream of abrasive which is vibrated against the tooth by an appropriate metal tip at a rate of 29,000 times a second. He added that the

accumulating abrasive often tends to obscure the field, but that he is, nevertheless, quite pleased with the performance of the Cavitron. He mentioned one further aspect of the Cavitron, namely in Preventive Dentistry in the opening of shallow pits and fissures into self-cleaning areas.

Next Dr. Dundass presented his experience with the Turbojet. He enumerated both its advantages and disadvantages, but he, too, seemed to find the former outweighing the latter, and in general he was very satisfied with the benefits derived from his machine, in particular its very low vibration level. He finds cavity preparation greatly speeded up. A discussion period followed.

Montreal Dental Club

On the evening of Wednesday, December 11th, the Montreal Dental Club held its pre-Christmas oyster and baked bean party at the R.C.D.C. Lacombe Avenue Armories.

To Mrs. Gordon J. Kelly and Mrs. T. Ross Murray, who were responsible for supplying the delicious home-baked beans, our congratulations. As in the past, it was a very successful gathering.

Coloured movies of summer and winter activities around Banff, and a canoe trip through Northern Ontario, brought the evening proceedings to a close.

SASKATCHEWAN

Saskatchewan Dental Association

The highlights of the last meeting were reports by three members. Dr. H. Cowburn reported in some detail on the course he attended in Civil Defense at Arnprior. He indicated the intensive programme covered at the course, and he certainly stimulated the interest of the members of our Society.

Dr. R. Dickson reported on the Winter Clinic held recently in Toronto. He intimated that a very interesting programme was provided.

Lastly, Dr. J. Schachter, recently elected to the Saskatchewan Dental Council, presented a very interesting report on the Council of the Saskatchewan College of Dental Surgeons and the discussions that transpired at his first meeting. The members present appreciated his report and observations of Council business and engaged in a very lively discussion regarding some items. Such reports and debates greatly assist a member of council to learn the view of the members of the profession.

GENERAL NEWS

Dr. Sognnaes in Scientific American

Dentistry in the United States has reached a standard of excellence where "dental skill has become almost too effective," writes Dr. Reidar Sognnaes, Professor of Oral Pathology at Harvard University in a recent issue of "Scientific American".

Though Americans spend more than \$1,-600,000,000 per year for dental care Dr. Sognnaes notes, "the dentist is taking care of only one-third of our population's dental ills. There is an estimated backlog of 700 million unfilled cavities. By the age of 35, more than two-thirds of the American people are in need of bridges or dentures to replace lost teeth. To keep pace with all our dental needs would require three times as many dentists as we have, and the cost would be tremendous.

"Prevention is the only rational solution; research the only hopeful approach," says Dr. Sognnaes, who is President of the International Association for Dental Research.

He comments that the nature of tooth decay cannot be classified pathologically. "Although its true nature remains obscure, we know for sure what dental decay is not. It is not an allergy, an inflammation, an atrophy or a cancer; it is a disease in a class by itself."

Conditions implicated in dental disease, Dr. Sognnaes states, "range from heredity to last night's snack."

Clean teeth are decay free, experiments prove, but truly clean teeth, Dr. Sognnaes points out, have thus far only been found in animals (rats) which are born and reared in completely germ-free isolation, or fed by means of a stomach tube.

Among the many research avenues being explored, Dr. Sognnaes lists the role of heredity; the role of the endocrine glands (gonads, pituitary, thyroid, adrenal, etc.); the role of saliva; the role of vitamin and mineral factors in nutrition, including the role of nutrients present only in very small amounts (trace elements such as fluorine); and the more commonly suspected culprits: oral bacteria and food debris.

Of this group, Dr. Sognnaes believes, the genetic approach is perhaps the most provocative because it is at once so fundamental, so difficult and so poorly understood.

"In the long run," he writes, "it is likely that the deeper secrets of dental health will turn out to lie within the teeth themselves and not merely in the environment, unfavorable as it may be."

"In brief," he says, "the tooth is no longer regarded as a passive subject, but an actor in the contest of decay."

The ultimate goal of research on tooth decay, he concludes, must be to find decay preventive methods which will allow the patients to forget about their teeth and do their jobs.

"There is nothing to suggest," Dr. Sognnaes states, "that the tremendous rise in tooth decay throughout the world during the past few centuries has leveled off. With increasing life expectancy dental ills are going to become more and more widespread and costly, dissipating time and energy and causing pain, distraction and apprehension among a population which in other respects is growing healthier. Nothing short of a broad and strongly supported scientific attack is likely to bring this problem under control before it gets completely out of hand."

American Academy of Dental Medicine

The American Academy of Dental Medicine announces its 12th Annual Meeting, which will be held at the Sheraton Mount-Royal Hotel, Montreal, on May 29-30-31, 1958.

Briefly, the three-day session is broken down as follows: Thursday 29th — The dentist and the Endocrine problem; Friday 30th — The dentist and the cleft palate problem; Saturday 31st — The dentist and the Dermatology problem. Included also is a ladies' program consisting of a bus tour of the Seaway development, a visit and reception by the film board, a reception by the City of Montreal, and a dinner and dance.

The Chairman of the meeting is Dr. Louis Rosen. For further details please contact Dr. Rosen — 3465 Ct des Neiges Road, Montreal, We-3-3502.

A.D.A. Comments on Radiation

The Council on Dental Therapeutics reported that millions of X-ray examinations have been made without a report of injury to a patient. Recent research has shown, the report says, that X-ray examinations of the teeth can now be made with even less radiation when the X-ray beam is properly filtered, centred with a lead diaphragm, and when super speed film, increased kilovoltage and longer developing time are used.

IN MEMORIAM

Oliver A. Marshall — Dr. Oliver Allinson Marshall, of Belleville, Ontario, died on December 8, 1957.

Dr. Marshall was born in 1870 at Boston Mills, Ontario, and was educated at Trinity College, University of Toronto. He graduated from the R.C.D.S. in 1894.

He practised in Picton and Belleville after post-graduate courses in orthodontics at Toronto, Montreal and Chicago.

Dr. Marshall was examiner for the University of Toronto and also for the Royal College of Dental Surgeons. He organized a school clinic in Belleville. He was a member of the Belleville Golf Club and Belleville Social Club, being made an honorary member of the latter. Dr. Marshall was on the city council and also the Board of Education in Belleville for several years. Dr. Marshall served in the Argyll Infantry. He was an Honorary Member of the R.C.D.S.

Surviving are two sons, Dr. Jack Marshall, Belleville, and Dr. Porte Marshall of London, England.

Arthur Theodore Sihler — Dr. Arthur Theodore Sihler of Simcoe, Ontario, died on December 12th, 1957.

Dr. Sihler was born in Simcoe in the year 1875 and received his early education at Central School, Simcoe. He graduated from the Royal College of Dental Surgeons in 1896 and set up his practice in Simcoe.

He was a member of the Norfolk Golf and Country Club for many years and a charter member of the Simcoe Lawn Bowling Club. For eight years Dr. Sihler was a member of the town council, and was Mayor of Simcoe in 1909, 1911, 1918 and 1919. He was also chairman of the Fire, Water and Light Committee in 1907, and served a number of terms on the Board of Education. He was made an Honorary Member of the R.C.D.S. in 1946.

Dr. Sihler is survived by his son, Dr. James T. Sihler, and three grandchildren.

Joseph Fraser McMillan — Dr. Joseph Fraser McMillan of Toronto, Ontario, died on December 16th, 1957.

Dr. McMillan was born in Shakespeare, Ontario, and received his early education at Stratford High School. He graduated from the Royal College of Dental Surgeons in 1896 and practised in Leamington and Toronto.

Dr. McMillan was a member of Leamington Masonic Lodge. He was made an Honorary Member of the R.C.D.S. in 1946.

Surviving are his wife, Maude, a daughter, Mrs. R. Atkins, and two sisters, Mrs. H. Whillans and Mrs. J. Thompkins.

Lester Whyte King — Dr. Lester Whyte King of Quesnel, B.C., died as the result of a heart seizure on November 17, 1957. He was 60 years of age.

Dr. King was born in Bellingham, Washington, and graduated from Portland Dental College in 1924. The following year he moved to Victoria, B.C., to relieve a dentist there and never returned to the United States.

About 30 years ago Dr. King started travelling in the interior of B.C., bringing dental care to hundreds in small towns and rural areas. He travelled from the Fraser Valley through to Prince Rupert.

In 1936 he married Rena Joyce of Quesnel and from then on more or less made Quesnel his headquarters. In 1951 he settled there permanently and opened his dental office. He was also located for shorter periods in Prince George and Wells.

Dr. King was a veteran of World War I, serving with the American Expeditionary Forces.

Richard Leslie Revell — Dr. Richard Leslie Revell of Woodstock, Ontario, died on December 24th, 1957.

He was born in Woodstock in 1866 and received his early education there. Dr. Revell graduated from the University of Toronto in the year 1896 and practised in Woodstock until 1952.

Dr. Revell was an Honorary Member of the R.C.D.S. He was president of the Young Liberal Club in 1906 and a member of the Masonic Order. He held the post of Alderman 1910-1911 at Woodstock and was chairman of the Board of Park Management for 15 years.

Surviving are three daughters, Mrs. W. R. Ward, Mrs. W. G. Shrimpton, and Mrs. R. W. Poole, and two sons, Clair of Woodstock and Kenyon of England.

W. G. Wilson — Dr. W. G. Wilson of North Battleford, Saskatchewan, died suddenly in December, 1957.

He was born in November, 1879, and went to live in Battleford in 1913. He graduated from the Northwestern Dental College in Chicago and then went West.

Dr. Wilson was a past master of the Masonic Lodge and was a prominent member of the Rotary Club.

Surviving are his wife, three sons and three daughters.

Homer George Allen — Dr. Homer George Allen of St. Petersburg, Florida, died on November 26, 1957.

Dr. Allen was born in Mount Forest, Ontario, and received his early education there.

He graduated from the University of Toronto in 1924. He practised with his father in Mount Forest for two years before going to St. Petersburg in 1926.

Dr. Allen was a member of the O.H.A. hockey team about the year 1920. In 1927 he married Irma Lynn of Emlington, Pa., who survives with one son, Homer Jr., and one daughter, Nancy.

Also surviving are two sisters, Marjorie and Florence, and one brother, Jack.

Jack Toplitsky — Dr. Jack Toplitsky of Montreal died suddenly on December 24th. He was 54.

Dr. Toplitsky was a graduate of McGill University School of Dentistry and practised in Montreal. He served as a Captain in the Dental Corps during the Second World War. He was a member of the Mount Royal Dental Society, the Canadian Legion and B'nai B'rith. He was past Grand-Chancellor of the Knights of Pythias. He was also active in youth and educational work.

Surviving are his wife, Marguerite, a son, Joseph, and two sisters, Mrs. S. Epstein and Miss Ann Toplitsky.

Lulu Maude Ryerse — Dr. Lulu Maude Ryerse of Port Dover, Ontario, died on December 27th.

Dr. Ryerse was born in Woodhouse Township and had taught school at Shand's and Doan's Hollow Schools. She later attended Toronto Dental College, and practised in Waterford for many years and also in Toronto.

She is survived by her sister, Mrs. H. Wing, a niece, Mrs. J. Foster, and two nephews, A. R. Wing and W. B. Wing.

James Wellington Kinnear — Dr. James Wellington Kinnear of Belleville, Ontario, died on December 25th, 1957.

He was born at Lonsdale, Hastings County, in 1876 and received his early education in Lonsdale and Napanee. Dr. Kinnear graduated from the University of Toronto R.C.D.S. in 1903 and practised in Napanee 1903 to 1905 and in Belleville 1905 to 1957. He was an Honorary Member of the R.C.D.S.

Dr. Kinnear took an active interest in every phase of public life and was an Alderman from 1929 to 1931 inclusive, and on the Board of Education for four years from 1937. He was also a member of the Library Board. He was a member of the Moira Lodge, A.F. and A.M. No. 11, serving as Master of the Lodge in 1920. In 1951 he was appointed Grand Steward of the Grand Lodge of Canada in the Province of Ontario, and in 1954 received the Veterans' Jubilee Medal for fifty years in the order. Dr. Kinnear was a charter member of Quinte Friendship Chapter, Royal Arch Masons, No. 227, and was First Principal of that

chapter in 1926 and later served as District Grand Superintendent of Royal Arch Masonry. In 1952 he was decorated with the 25-year Past Principal's Jewel. He was also a member of the Belleville Chapter No. 55.

Surviving are his wife, two daughters, Mrs. J. S. Carman, and Miss Louise Kinnear, one son, E. F. C. Kinnear of Montreal, one brother, George, and three grandchildren.

David H. Baird — Dr. David H. Baird of Ottawa, Ontario, died in November, 1957.

Dr. Baird was born at Fitzroy Harbour and received his early education in Quebec, matriculating from McGill. He graduated from the University of Toronto in 1897 and practised in Ottawa.

Dr. Baird served as a Corporal in the South African War 1901 to 1902, and was with the Canadian Dental Corps from 1904 to 1914. He was made a Captain in 1906. Dr. Baird was the first dentist ever to partake in war and is considered the pioneer of the Canadian Dental Corps. He was an Honorary Member of the R.C.D.S.

He was a member of Free Masons and Elks and numerous Church affiliations.

Richard Frederick Flach — Dr. Richard Frederick Flach of Hamilton, Ontario, died on January 5th, 1958. Dr. Flach was killed suddenly when his shotgun was accidentally discharged whilst he was cleaning it.

He was born in Buffalo, N.Y., in 1903 and received his early education at Hamilton Technical School. Dr. Flach graduated from the R.C.D.S. (U. of T.) in 1927 and practised in Hamilton.

Dr. Flach was president of the Hamilton Dental Association in 1941. He was Voluntary Inspector of Barton Township Schools from 1927 to 1928. He was president of White Rock Hunt Club, and a member of Stoney Creek Men's Club and Hamilton Technical Club.

Surviving are his wife, Anne, one daughter, Margaret Ann, his mother, Mrs. H. J. Flach, and one sister, Mrs. F. A. Burgess.

Lewis F. Rigg — Dr. Lewis F. Rigg, a retired dental surgeon, died in January, 1958. He was 87.

Dr. Rigg was born in Homer, N.Y. He graduated from the University of Toronto in 1899 and practised in Toronto with his brother until 1908 when he established his own practice. He retired in 1940.

Dr. Rigg was a prominent Mason and was past master of Ashlar Lodge, past principal of St. Paul's Royal Arch Chapter, a past presiding officer of the Toronto Lodge of Perfection and the Toronto Chapter of Rose Croix A. and A.S.R.

Dr. Rigg was an Honorary Member of the R.C.D.S. He had many honours in Grand Lodge, Capitalar Masonry and the Scottish Rite, being a past lieutenant-grand commander, 33rd degree.

NATIONAL RESEARCH COUNCIL
REGULATIONS GOVERNING
GRADUATE DENTAL RESEARCH FELLOWSHIPS

1. The National Research Council offers a limited number of Fellowships for graduates in dentistry. They are designed to provide advanced training and experience in research in one of the sciences basic to dentistry. Fellowships will not be awarded to graduates in dentistry for the purpose of providing practical training and experience in the clinical branches of dentistry.

Dental Research Fellowships are normally tenable at Canadian universities. Special permission to hold an award at an institution outside Canada may be granted to a person who has shown outstanding ability in research if the particular training desired is not available in Canada.

2. Fellowships are open on equal terms to men and women and are awarded to the applicants who are deemed best qualified on the evidence submitted.

3. A candidate must be a graduate of a dental school approved by Council and resident in Canada.

4. An applicant to be eligible for a first award must not have passed the thirtieth anniversary of his birth on March 31st of the year of application, except under special circumstances or in the case of a war veteran.

5. Application for a Fellowship must be made by the candidate to the National Research Council on the official form. He shall submit a complete account of his academic career, including a transcript of his university record. The candidate shall name the institution at which he intends to study and the proposed field of work. At least three recommendations must be submitted from professors or instructors under whom he studied during his undergraduate and postgraduate careers, stating that, in their estimation, he is worthy of training for scientific research.

6. Each applicant must arrange for his admission to a university laboratory or dental school approved by Council. He must submit, with his application, a statement from the professor under whom he intends to work, indicating willingness to undertake the required supervision and recording the approval of the head of the university department concerned. Such a supervisor will be expected to submit to the Council a confidential report on the grantee's work at the mid-year and on the conclusion of the award.

7. Successful candidates are required to devote themselves for a period of twelve consecutive months wholly to the objects of the award. During that time they are forbidden to hold any position of emolument or to engage in teaching for more than four hours a week.

8. Tenure of a Fellowship shall normally commence on July 1st but in exceptional circumstances the Council may authorize a change in this date.

9. A Fellow shall submit reports on his work as follows:—

(a) On conclusion of the tenure of the Fellowship, or not later than September 15th following this conclusion a complete and detailed report on the work carried out during the entire tenure.

(b) In a case where the Fellowship is renewed, a concise report at the end of the first year of tenure. These reports must have the written approval of the grantee's supervisor.

10. Subject to the approval of the supervisor, Fellows are free to publish the results of work done during the tenure of a Fellowship. The Fellow shall provide the Council with five reprints of all such publications. These papers should acknowledge assistance given by the National Research Council. This may be provided for by placing an asterisk after the author's name on the title page and a related foot-note reading—*Dental Research Fellow, National Research Council, Canada.

11. Awards are payable as follows:—

(a) Awards tenable in Canada—50 per cent on notification from the supervisor that a Fellow has reported for work; 40 per cent on receipt of a report from the supervisor that satisfactory progress has been made; 10 per cent on completion of the period of tenure and the submission to the Council of a satisfactory report on the year's work.

(b) Awards tenable outside Canada—50 per cent not more than one month prior to the departure of the grantee to take up his award; 50 per cent at the mid-term following receipt of a report from the supervisor that satisfactory progress has been made.

12. Graduate Fellowships with a value of up to \$4,000 per annum will be open to graduates in dentistry with high academic standing. The value of the Fellowship will depend on the candidate's qualifications and experience.

Senior Fellowships with a value of up to \$5,000 per annum will be open to graduates in dentistry who have had experience in research work. The value of the Fellowship will depend on the candidate's training and achievement in original research.

13. Each person awarded a Dental Research Fellowship may be paid a travelling grant towards any necessary travelling in Canada and the United States, on the basis of single coach railway fare. For ocean travel the Council will pay tourist ocean fare plus rail coach fare each way. A further grant equal to two-thirds of this total amount will be paid towards the travelling expenses of a married Fellow when accompanied by his wife.

14. Application for a Dental Research Fellowship, and **all required supporting documents**, must be received not later than October 15th or February 1st, for awards to be made in the Fall and the Spring each year, tenable from July 1st following. Late or incomplete applications will not be considered.

Address all communications to:

The Awards Officer, National Research Council, Ottawa 2, Canada.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th—8th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	Sept. 4th—7th
1961	Saskatoon, Saskatchewan	June 25th—28th
1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Granite Club Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Annual "At Home" Dance	Royal York Hotel, Toronto, Ont.	Mr. Calvin Torneek	Faculty of Dentistry Dental Students' Soc., 230 College St., Toronto 2B, Ont.
May 1, 2, 3, 1958	British Columbia Dental Association Annual Convention	Hotel Vancou- ver, Vancou- ver, B.C.	Dr. W. Ross Upton, Exec. Secretary	217 Medical Dental Bldg., Vancouver 1, B.C.
May 18-21,	Convention—Ontario Dental Association	Royal York Hotel, Toronto, Ont.	Mrs. A. Durham, Secretary	234 St. George St., Toronto, Ont.
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia	Mrs. M. Kolb, Secretary	4001 Spruce St., Philadel- phia 2, Penna, U.S.A.
Sep. 14, 15, & 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. A. Slone	101 Rideau Street, Ottawa, Ont.

SHORT GRADUATE COURSES

University of Toronto, Faculty of Dentistry

Orthodontics—Mar. 10-14, 1958—Enrolment Limit 12. Fee \$100—In charge: Dr. D. G. Woodside.

Dental Oral Surgery and Anaesthesia—April 21-25, 1958—Enrolment Limit 12. Fee \$100—In charge: Dr. J. H. Johnson.

Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

Tufts University School of Dental Medicine

Oral Roentgenology—April 22, 23, 1958

Hypnosis and Its Clinical Applications—May 9, 10, 12, 13, 14, 1958

Full Denture Prosthesis—June 2 through June 6, 1958

Clinical Dentistry for Children—June 9, 10, 11, 1958

For information and application write: Director, Postgraduate Division, Tufts University School of Dental Medicine, 136 Harrison Avenue, Boston, Mass.



DE L'ASSOCIATION DENTAIRE CANADIENNE

Etude sur les nouveaux moyens de contrôle de la carie dentaire

par GUY TREMBLAY, Montréal

Introduction

De nos jours, il n'arrive plus de grandes épidémies: cette ère est révolue. De grands progrès ont été réalisés contre les maladies endémiques. Ainsi on a obtenu un contrôle quasi-parfait de la tuberculose. Il en résulte que certaines maladies chroniques, auxquelles on avait attaché moins d'importance, deviennent un problème majeur de santé. L'un d'entre elles, la carie dentaire, continue toujours ses ravages, qui, sans être spectaculaires, n'en sont pas moins des plus répandus. Si nous ajoutons les effets locaux et même constitutionnels de cette maladie, nous avons là un problème fort complexe auquel la science n'a pas encore trouvé de solution définitive. Pour améliorer la santé publique, il incombe à la profession dentaire de continuer ses recherches et ses expériences en vue d'obtenir des moyens de contrôle et de prévention contre la carie

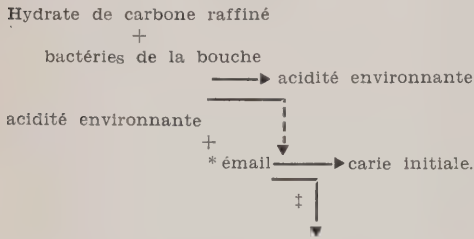
dentaire. Ces moyens seront d'autant plus efficaces qu'ils atteindront un plus grand nombre d'individus. Au rythme actuel des soins dentaires, à peine le quart des gens atteints de carie peuvent recevoir des traitements. Les possibilités d'amélioration sont grandes, aussi il est à espérer que cette victoire de la carie sur la santé dentaire ne soit que passagère et que la science lui destine un revers sans lendemain.

I—La carie dentaire

A—Définition

La carie dentaire est une maladie qui s'attaque aux tissus calcifiés de la dent. Il est reconnu qu'elle est causée par l'acidité résultant de l'action des bactéries sur les hydrates de carbone. Il s'en suit une décalcification de la portion inorganique suivie d'une désintégration de la substance organique. C'est là l'essence même

de la carie dont le processus peut se résumer ainsi:



* pas d'acide, si facteur neutralisant.
 † pas de carie, si résistance de la dent.

B—Facteurs essentiels à son processus

Dans le mécanisme de la carie, les facteurs locaux sont les principaux déterminants qui causent la carie. Les facteurs organiques viennent modifier ses progrès favorablement ou non. Plusieurs théories ont été émises sur le processus de la carie. Dietz⁽¹⁾ en a fait comme une synthèse en établissant cinq conditions essentielles pour causer la carie dentaire:

- 1—Susceptibilité à la carie
- 2—Bactéries acidogéniques et acido-résistantes
- 3—Hydrates de carbone fermentescibles
- 4—Système enzymatique des bactéries
- 5—Plaque bactérienne.

1—Susceptibilité à la carie

On ne peut produire la carie dentaire dans la bouche des gens qui semblent immunisés. Cet état d'immunité fait de la susceptibilité un facteur essentiel qui conditionne l'attaque de la dent par la carie. Ainsi la structure de la dent s'avère importante pour influencer la susceptibilité à la carie. De plus, la preuve que le fluor⁽²⁾ augmente la résistance de la dent donne l'évidence que la nature chimique de la dent est un facteur déterminant de la susceptibilité à la carie.

2—Bactéries acidogéniques et acido-résistantes

La majorité des auteurs s'accordent à dire que la présence de bactéries acidogéniques est essentielle pour commencer la décalcification de la structure inorganique de la dent. Les bactéries protéolytiques ne produisent pas un grand changement sur la dentine saine.⁽³⁾ Cependant, l'avance des bactéries protéolytiques devient rapide à travers la dentine qui a subi la décalcification acide.⁽⁴⁾

Dès 1915, Kliger⁽⁵⁾ a remarqué que la croissance des lactobacilles était proportionnelle à l'activité de la carie. En effet, on retrouve toujours des lactobacilles associés à la carie dentaire surtout au début du processus de la carie.⁽⁶⁾

La décalcification de l'émail devient rapide à un pH inférieur à 5.⁽⁷⁾ Il faut donc que les microorganismes acidogéniques soient en même temps acido-résistants. Le lactobacille acidophile a un rôle étiologique important. Stephan et Hemmens⁽⁸⁾ sont d'avis que les lactobacilles et certains streptocoques hémolytiques sont les principaux microorganismes acido-résistants pouvant produire un pH acide assez rapidement pour décalcifier une dent.

3—Hydrates de carbone fermentescibles

Comme toute cellule organique, la vie des microorganismes dépend du substrat sur lequel ils peuvent agir. Les hydrates de carbone fermentescibles constituent le seul substrat avec lequel la flore buccale peut former de l'acide rapidement.⁽⁹⁾ On a calculé qu'environ 1.6 à 1.7 mg de glucose peut fournir assez d'acide pour décalcifier 1 mm cube d'émail. Tout indique que les amidons sont d'importance minime dans le processus de la carie, car ils ne peuvent pas diffuser dans la plaque bactérienne et ne sont pas transformés rapidement en sucres simples dans la bouche.

4—Système enzymatique des bactéries

Les bactéries ont besoin d'un système enzymatique pour scinder les hydrates de carbone et produire des acides. De cette façon, les bactéries acidogéniques peuvent maintenir un état d'acidité suffisante pour attaquer la dent et décalcifier l'émail.

Dans ce système complexe d'enzymes, la ptyaline ou amylase salivaire est la seule qui est sécrétée naturellement par les glandes salivaires.

En 1948, Fosdick⁽¹⁰⁾ a établi qu'il faut 13 réactions chimiques pour dégrader le sucrose en acide organique. Ainsi il faut dix enzymes et nombre de coenzymes pour commencer et parfaire la dégradation du glucose en acide lactique. A ces dix stages, un inhibiteur enzymatique peut arrêter théoriquement le processus du système enzymatique bactérien et devenir un agent de contrôle de la carie. La possibilité d'utilisation d'inhibiteurs enzymatiques semble promettre bien que son emploi comme moyen de contrôle n'ait pas encore été démontré.

5—Plaque bactérienne

On a remarqué l'importance de la plaque bactérienne comme facteur de carie dès

1890.⁽¹¹⁾ De fait, cette plaque joue un rôle notoire dans le processus de la carie:

1) Par sa structure

C'est un mince treilli blanc, opaque, adhérent à la surface des dents mal nettoyées. Elle est constituée de bactéries et de débris organiques.⁽¹²⁾ Les bactéries ont ainsi un milieu de culture favorable.

2) Par sa bactériologie

Dans la plaque dentaire, on trouve surtout des lactobacilles et quelques streptocoques hémolytiques qui survivent à pH très bas. Les bactéries acidogéniques et acido-résistantes constituent une arme très efficace pour attaquer la dent.

3) Par sa membrane sélective

La plaque est munie d'une membrane perméable à certaines substances et imperméable à d'autres. Ainsi le glucose pénètre rapidement sous la plaque;⁽¹³⁾ il est transformé en acide lactique sans que d'autres substances, pouvant neutraliser l'acidité formée, puissent diffuser à travers la plaque. Cela dépend du pouvoir tampon. Le pouvoir tampon de la salive d'une bouche avec carie n'est pas plus bas que celui de la salive d'une bouche sans carie. Cependant, le pouvoir tampon de la plaque est plus grand que celui de la salive. De cette façon, la membrane sélective de la plaque empêche la salive de neutraliser l'acidité fournie sous la plaque et favorise la carie dentaire.

II—Méthodes de prévention et de contrôle

Méthodes conventionnelles

La profession dentaire a toujours visé au contrôle de la carie dentaire. Mais vu la complexité du problème et le manque de chercheurs, les progrès sont lents et laborieux. Par une brève revue des mesures prophylactiques conventionnelles, le présent état de contrôle de la carie ne semble pas suffisant. Nous verrons qu'il faut l'application de mesures plus efficaces pour résoudre le problème de la carie dentaire.

Parlons d'abord des mesures prophylactiques conventionnelles et de leur valeur respective.

1—Hygiène buccale

"Mens sana in corpore sano." Il est certain que dans une bouche propre, la carie progresse plus lentement, mais elle n'est pas prévenue par l'hygiène buccale

assurée par le dentiste: a) prophylaxie; par le patient: b) brossage des dents.

a) Prophylaxie

Même si la prophylaxie est faite par le dentiste ou l'hygiéniste dentaire, il n'y a pas de preuve scientifique qu'une telle prophylaxie puisse réduire l'incidence de la carie dentaire. Garvin⁽¹⁴⁾ n'a pas pu démontrer de réaction de carie chez 765 patients recevant des traitements prophylactiques, chaque 6 mois. Il est vrai que la prophylaxie enlève les plaques dentaires. Mais comme les plaques dentaires se reforment sur les dents en l'espace d'un à quatre jours,⁽¹⁵⁾ il est impossible, par ce moyen, de prévenir la formation de nouvelles cavités.

L'application de fluorure de sodium après la prophylaxie a beaucoup amélioré cette méthode,⁽¹⁶⁾ qui a ainsi un effet partiel sur le contrôle de la carie.

b) Brossage des dents

Le succès du brossage dépend de sa durée, de la vigueur avec laquelle il est exercé et surtout du temps où il est fait. Le brossage des dents immédiatement après toute ingestion de nourriture est très important. Car l'acidité en concentration suffisante pour décalcifier la dent est présente à la surface de la dent trois à vingt minutes surtout après l'ingestion d'hydrates de carbone et peut durer 30 à 90 minutes. C'est pourquoi le brossage des dents immédiatement après l'ingestion de sucre tend à réduire la formation d'acide et ainsi à prévenir la carie dentaire. Dans une expérience basée sur cette hypothèse, Fosdick⁽¹⁷⁾ a trouvé une réduction de 26 à 53% d'incidence de la carie avec l'emploi d'un dentifrice neutre.

2—Diète

Au point de vue dentaire, la diète pré-natale et celle ingérée durant la formation des dents (jusqu'à 12 ans environ) peut influencer la résistance de la dent. Comme la vitamine D règle la fixation du calcium de la dent, une déficience de cette vitamine durant la période de formation des dents donnera une dent de plus faible structure et par conséquent, plus susceptible à la carie. La réduction des sucres ne peut être efficace que si elle est méthodique et non drastique.

3—Restaurations

Les restaurations ne peuvent qu'empêcher une plus grande expansion de la carie. C'est le contrôle des dommages. Ce

moyen, malgré son efficacité, ne peut rien apporter de positif dans la prévention de la carie qui est trop répandue. Par ce moyen, on peut contrôler la carie dans une bouche. Impossible d'établir un contrôle général. Pendant que le dentiste obture une dent, il y a peut-être dix caries qui débutent.

4—Imprégnation de l'émail avec des sels métalliques

1—Nitrate d'argent

Klein et Knutson⁽¹⁸⁾ ont montré que l'application de nitrate d'argent ammoniacal neutralisé par de l'eugénol sur une molaire saine est inefficace pour prévenir la carie. Le nitrate d'argent agissant sur la substance organique de l'émail, forme un protéinate d'argent qui est réduit en argent métallique. Cette action du nitrate d'argent retarde l'action des acides. Cependant, le contrôle de la carie ne consiste pas à retarder le processus de la carie, mais à le prévenir.

2—Ferrocyane de zinc

Gottlieb⁽¹⁹⁾ a recommandé l'application d'une solution 40% de chlorure de zinc avec une solution de ferrocyanure de potassium à 20%. Son expérience ne donna pas de résultats satisfaisants. De son côté, Pelton⁽²⁰⁾ n'a pas trouvé de différence entre les dents traitées au ferrocyanure de zinc et les non traitées.

Nouveau moyens de contrôle et prévention

Le processus de la carie est muni d'un puissant pouvoir destructeur de la dent. Pour lutter à armes égales, il faut s'efforcer davantage à prévenir les dégâts causés par la carie qu'à les réparer. Après des années de recherches et d'expériences, les moyens qui peuvent atteindre ce but sont peu nombreux; nous avons:—

1—Le fluor:

- a) La fluoruration des eaux d'approvisionnement.
- b) L'administration buccale de fluorure de sodium.
- c) L'application topique de fluorure de sodium.

2—Réduction des hydrates de carbone dans la diète.

N.B.—Dentifrices—Principaux essais,

1—Le fluor

A—Fluoruration des eaux d'approvisionnement

1—La fluoruration

La fluoruration est un moyen de contrôle pratique et économique. Pratique, elle peut atteindre la majorité des individus; économique, elle ne coûte approximativement que .10 par personne, par année.

La fluoruration consiste à ajouter un composé de fluor, surtout le fluorure de sodium ou la fluorosilicate de sodium, dans l'eau de consommation à raison de 1 p.p.m. On obtient la saturation de l'eau à 25° C. Prenant comme barème qu'il faut 55.6 gallons d'eau pour dissoudre 18.8 livres de fluorure de sodium, cette solution donne une concentration de 1 p.p.m. de fluor à 1 million de gallons d'eau.

Le choix du composé du fluor à employer dépend de l'efficacité prouvée de ce composé pour réduire la carie dentaire. Actuellement, la preuve n'est pas établie pour justifier l'usage d'un composé du fluor autre que le fluorure de sodium ou le fluorosilicate de sodium. Toutefois, on peut préférer le dernier par économie.

2—Relation entre le fluor et la carie dentaire

La relation entre le fluor et la santé dentaire fut définitivement établie en 1931. On notait qu'une forte concentration en fluorure (plus de 5 p.p.m.) dans l'eau d'approvisionnement causait la fluorose dentaire endémique ("mottled teeth"). Selon Deatherage,⁽²¹⁾ la fluorose dentaire est observable quand le fluor dans l'eau d'approvisionnement dépasse 2 p.p.m. Tout cela prouve que la sévérité de la fluorose dentaire est proportionnelle à la concentration en fluor de l'eau absorbée durant la période de formation des dents.

D'autre part, on a observé que les enfants buvant de l'eau naturellement fluorée avaient une incidence de carie dentaire très faible, que leurs dents montrent ou non des signes de fluorose. Cette observation conduisit à de plus extensives recherches épidémiologiques. Se basant

sur les faits établis, le Dr Dean⁽²²⁾ a clairement démontré une variation inverse entre la fluorose dentaire endémique et la carie dentaire. D'où l'on peut conclure que l'élément producteur d'immunité présent dans l'eau fluorée est toujours agissant, que la dent soit affectée ou non de fluorose. Au Dr Dean et à ses associés revient le crédit important d'avoir établi que le fluor à doses élevées produit une maladie et à quantité minime 1 p.p.m. en prévient une autre.

3—Métabolisme du fluor

Le fluor est l'un des éléments les plus actifs de la famille des halogènes. Il est souvent présent naturellement dans l'eau de consommation en concentration variant de traces jusqu'à 14 à 15 p.p.m. Le fluor se rencontre aussi dans certains aliments, surtout le thé, poisson, lait. Dans nos aliments, nous ingérons chaque jour environ .2 à .3 mg de fluor. La quantité de ce fluor absorbée est trop minime pour avoir des effets nuisibles à la santé. C'est par l'eau de consommation que nous pouvons prendre le plus de fluor. Un adulte vivant dans un climat tempéré, consomme 1200 à 1600 cc. d'eau par jour. Si cette eau contient 1 p.p.m. de fluor, il en résulte une consommation de 1.2 à 1.6 mg de fluor. Avec la fluoruration, la consommation journalière de fluor ne peut nuire.

Au début de la fluoruration, 50% du fluor est emmagasiné dans les os et surtout les dents. Par la suite, un équilibre s'établit et environ 90% du fluor est éliminé par le rein qui remplit ainsi une fonction naturelle.⁽²³⁾

L'objection voulant que le fluor cause une toxicité aigüe ou chronique ne peut pas tenir. Le métabolisme du fluor donne l'évidence qu'à une concentration de 1 p.p.m., le fluor n'a aucun effet toxique. D'ailleurs, des gens ont bu pendant des générations de l'eau ayant une forte concentration en fluor et n'ont eu qu'un trouble local: la fluorose, mais aucun effet constitutionnel nuisible.⁽²⁴⁾

4—Mécanisme du fluor

Le fluor produit une immunité partielle contre la carie dentaire. Les expériences de Dean⁽²⁵⁾ et de beaucoup d'autres ne permettent pas d'en douter. Cependant, la fluoruration n'est pas une médication, car le fluor n'a aucun effet sur les dents déjà cariées.

Même si le mode d'action du fluor n'est pas encore clairement compris, on peut citer au moins deux mécanismes par lesquels le fluor peut protéger les dents contre la carie.

1. Le fluor, comme le calcium et le phosphore, est un constituant chimique caractéristique de la structure de l'émail qui contient 95.5% de sels minéraux. S'il y a déficience de fluor durant la formation des dents, nous aurons un émail mince et peu résistant. Par la fluoruration, le fluor entre dans la structure de l'émail et forme une fluapatite. L'incorporation du fluor dans la substance de la dent rend celle-ci plus résistante à l'action de l'acidité buccale.⁽²⁷⁾

2. Le fluor en concentration voulue, 1.00 à 1.5 ppm., inhibe l'action du système enzymatique des bactéries acidogéniques que l'on trouve en très grand nombre au début d'une carie. Libéré de la substance de la dent, l'ion fluor peut empêcher plusieurs bactéries de participer au processus de la carie.⁽²⁸⁾

5—Résultats

Bien que le mécanisme d'action du fluor demeure encore plutôt hypothétique, un fait a été établi par de nombreuses recherches épidémiologiques. Il y a une association directe entre l'absorption d'eau fluorée pendant la période de formation et une réduction de 60 à 65% du taux de la carie dentaire. Les effets bienfaisants de la fluoruration sont nombreux:—

- 1) Six fois plus d'enfants qui n'ont pas de carie.
- 2) On peut s'attendre à une réduction de 60% du taux de carie.
- 3) La perte de la 1ère molaire est diminuée dans l'ordre de 73%.⁽²⁹⁾
- 4) 90% moins de caries sur les incisives supérieures.⁽³⁰⁾

Ces faits ont été maintes fois prouvés aux Etats-Unis où approximativement une personne sur sept bénéficie d'un programme de fluoruration.

Au Canada, les faits sont les suivants* :—

a—Villes qui ont commencé la fluoruration :—

Brantford, Ont.
Fort Erie, Ont.
Thorold, Ont.
Sudbury, Ont.
Deep River, Ont.
Oshawa, Ont.
Moose Jaw, Saskatchewan
Assiniboia, Saskatchewan
Toronto Township, Ont.

b—Villes qui ont approuvé la fluoruration :—

Windsor, Ont.
Hawkesbury, Ont.
Saskatoon, Sask.
Prince Albert, Sask.
Prince George, C.B.
Renfrew, Ont.
Michipicoten
Metropolitan Toronto

Le récent rapport de Brantford est significatif. Dans cette expérience, on s'est servi de deux villes témoins :—

Sarna, où l'eau ne contient pas de fluor.
Stratford, où l'eau est naturellement fluorée, 1.6 p.p.m.

Ce rapport montre bien que les enfants de Brantford consomment depuis plus de dix ans de l'eau mécaniquement fluorée, 1 p.p.m., avec avantage. L'incidence de la carie a de beaucoup diminué. Vu l'importance de la molaire de six ans, qu'on appelle la clé de la dentition, l'augmentation du pourcentage des premières molaires permanentes sans carie mérite d'être notée.

Voici les chiffres du rapport :

Pourcentage d'enfants ayant la première molaire permanente sans carie :—

Age	Année	Sarnia	Brantford	1.6 ppm Stratford
6-8	1948	41.26	46.86	78.42
	1955	32.57	67.13	68.39
9-11	1948	6.65	6.22	52.31
	1955	3.49	26.25	33.61
12-14	1948	1.03	2.02	33.69
	1955	2.06	8.80	23.27

Dans cette expérience de dix ans, aucun effet toxique n'a été rapporté par la profession médicale ou dentaire.⁽³¹⁾ Les résultats de cette fluoruration, confirmés par d'autres récentes études, ⁽³²⁾ ont appuyé l'approbation officielle d'organisations de santé telles que :—

L'Association dentaire canadienne⁽³³⁾

L'Association médicale canadienne⁽³⁴⁾

L'Association canadienne de Santé publique⁽³⁵⁾

Ces organisations de santé recommandent que la concentration en fluor de toute eau d'approvisionnement déficiente en cet élément soit portée à 1 p.p.m., par addition mécanique de fluor.

Si toutes les villes canadiennes suivent cette recommandation, on peut stipuler que chaque enfant qui naîtra où l'eau est ou sera fluorée (1 p.p.m.), pour chaque trois dents cariées qu'il pourrait avoir, il n'en aura qu'une.

La fluoruration s'avère un très bon moyen de contrôle et de prévention. Même les adultes semblent en profiter autant que les enfants.⁽³⁶⁾

b) *Administration buccale du fluorure de sodium*

Cette méthode peut empêcher une déficience en fluor lors de la formation des dents et favoriser ainsi l'obtention de dents plus fortes et, par conséquent, plus résistantes à la carie.

Pour obtenir la solution désirée, on dissout :—

0.132 grammes de fluorure de sodium dans 240 cc d'eau distillée.

Certaines directives sont à suivre pour que la méthode soit efficace :—

—Ajouter une cuillerée à thé de cette solution à chaque pinte d'eau jusqu'à l'âge de deux ans.
(employer cette eau à toutes fins)

—Prendre une cuillerée de la solution telle quelle tous les deux jours jusqu'à l'âge de trois ans.

(on peut l'incorporer aux breuvages pour éviter que l'enfant pense qu'il prend un médicament)

* Source: Questionnaire envoyé au sous-ministre du Ministère de la Santé en avril 1954 par le Ministère de la Santé et du Bien-Être, Victoria.

—Prendre une cuillerée à thé de cette solution telle quelle une fois par jour jusqu'à l'âge de dix ans.

c) *Application topique de fluorure de sodium*

1) Généralités

Les résultats obtenus par la fluoruration de l'eau d'approvisionnement laissent supposer que l'application topique d'une solution de fluorure de sodium sur les dents pourrait diminuer l'incidence de la carie dentaire. Basée sur l'affinité du fluor pour le calcium, cette méthode d'application topique peut réduire l'incidence de la carie dentaire. C'est un fait qui a été démontré par nombre de chercheurs.

L'efficacité de cette méthode dépend de certaines conditions:—

- 1) Du nombre d'applications—
Quatre traitements donnent une réduction de 40%. L'efficacité n'est pas augmentée en faisant plus de quatre applications par traitement.
- 2) De la concentration—
Une solution à 1% est aussi effective qu'une solution à 2%.
- 3) Du nettoyage des dents—
Omettre de nettoyer les dents avant le traitement diminue son efficacité.
- 4) Du temps—
Un espace de temps de trois à six mois au lieu d'une semaine entre chaque application diminue l'effet préventif.

2) Technique d'application

L'effet prophylactique obtenu par quatre applications n'est pas matériellement réduit après trois ans. Pour cela, plusieurs techniques sont bonnes. Voici celle du Dr Knutson.⁽³⁸⁾

- 1) Nettoyer les dents avec pierre-ponce fine. Selon Grossman, il est mieux d'employer une solution de 4% de fluorure de sodium au lieu de l'eau avec la pierre-ponce.
- 2) Bien isoler les dents avec des rouleaux de coton.
- 3) Bien assécher les dents surtout interproximalement.
- 4) Appliquer une solution à 2% de fluorure de sodium. Cette solution doit être

chimiquement pure: NaF + eau distillée.

- 5) Assécher à l'air pendant trois minutes.
- 6) Répéter à une semaine d'intervalle jusqu'à quatre applications.

On recommande⁽³⁸⁾ de répéter les traitements à intervalles d'environ trois ans pour se conformer à l'âge d'éruption des dents de l'enfant. L'application initiale sera faite vers trois ans pour protéger les dents temporaires; second traitement à sept ans pour protéger les incisives et molaires; troisième à dix ans, pour canines et prémolaires; quatrième, vers 13 ans pour les secondes molaires.

3) Résultats

Jusqu'à date, il n'y a pas de confirmation de l'efficacité de l'application topique du fluorure de sodium pour les dents des adultes. On doit limiter cette méthode aux enfants de moins de quinze ans. Si bien faite, l'application topique augmente la résistance de la dent et permet ainsi une diminution de l'incidence de la carie dentaire d'environ 40%.⁽³⁹⁾

2—*Réduction des hydrates de carbone dans la diète*

1) Rôle des hydrates de carbone dans le processus de la carie

Les hydrates de carbone servent de substrat aux bactéries qui, par leurs système enzymatique, dégradent les sucres en acide organique (lactique surtout). Par le contrôle des hydrates de carbone dans la diète, on peut contrôler l'acidité de la bouche et conséquemment la carie dentaire. La décalcification des dents est active surtout à pH inférieur à 5 et dépend de la période de temps durant laquelle les acides sont maintenus en contact avec les dents. Cette expérience illustre bien le rôle des sucres surtout raffinés comme producteurs d'acide.

Quelques minutes après que les sucres sont venus en contact avec les plaques ou les débris salivaires, une acidité suffisante pour décalcifier l'émail est produite. La nécessité de ce contact des sucres avec les dents pour produire la carie a été

démontrée. Des animaux nourris par tube stomacal⁽⁴⁰⁾ avec une diète capable de produire la carie, n'en ont pas produit. Il est évident que la carie dentaire est un phénomène local associé d'abord avec la rétention de sucre raffiné et l'activité acidogénique des bactéries.

2) Méthode de contrôle des hydrates de carbone

Il n'est pas question d'une méthode drastique, mais d'une méthode basée sur des données scientifiques. Plusieurs chercheurs⁽⁴¹⁾ ont démontré que la carie peut être contrôlée matériellement par le patient, soit en évitant les aliments ou les breuvages contenant des sucres, soit en prenant une diète pauvre en sucres raffinés pendant sept semaines.

C'est le plan de l'Université de Michigan. Pendant les quatre premières semaines, le patient ne prend aucun sucre sous aucune forme. Ensuite, il prend un peu de sucre jusqu'à la fin de la période de diète. Les calories des sucres sont compensés par plus de protéines.

Pendant la diète, on fait le compte des lactobacilles à chaque semaine pour voir si le patient coopère au traitement. On peut envoyer au laboratoire un prélèvement de salive. Il est obtenu par le patient lui-même. A jeun, le matin, le patient n'a qu'à mâcher un morceau de paraffine stérile qu'il dépose dans une bouteille également stérile. Paraffine et bouteille sont fournis par le dentiste. On peut aussi faire le test colorimétrique de Snyder.⁽⁴²⁾ Au bout de sept semaines, si le compte des lactobacilles demeure bas ($\pm$ — 0 — 1000), le patient peut reprendre sa diète habituelle, mais il est désirable qu'il ne prenne pas trop de sucres.

3) Résultats

On croit que, lorsque le compte des lactobacilles a été réduit et qu'une restriction raisonnable des sucres est établie, le compte des lactobacilles demeure bas et l'activité de la carie est réduite pour une période de six mois à deux ans.

On mentionne même que, quand des patients ont observé une diète à sucre réduit, on doit s'attendre à une réduction du compte des lactobacilles et du nombre de cavités même dans les cas où la carie rampante était présente au début du traitement.⁽⁴¹⁾

Ce procédé a pour but de restreindre le processus de la carie dentaire. En empêchant l'acidité de se former, il diminue les forces-d'attaque de la carie et peut être un excellent moyen de contrôle. Cependant, il nécessite beaucoup de coopération de la part du patient et ne peut s'appliquer qu'aux patients intelligents et compréhensifs. Pour les autres, Volker⁽⁴³⁾ recommande de suivre une diète plus ou moins modifiée pendant une période de temps plus longue.

N.B. Dentifrices: Principaux essais

Pour servir de moyen de contrôle et de prévention de la carie dentaire, un dentifrice doit contenir un agent antibiotique ou antiacide. Ainsi, il pourrait inhiber la croissance des lactobacilles ou prévenir les changements de pH de la plaque sur la surface de la dent. Plusieurs tentatives ont été faites en ce sens avec plus de succès "in vitro" qu'"in vivo".

Comme principaux agents antibiotiques employés, nous avons le phosphate dibasique d'ammonium et la pénicilline. Comme antiacides, il y a l'acide iodoacétique, la vitamine K, certains acides aminés et l'urée.

Kesel et ses collaborateurs⁽⁴⁴⁾ ont trouvé que le filtrat d'une salive résistante à la carie contenait une substance pouvant inhiber la croissance des lactobacilles et empêcher la dégradation des hydrates de carbone. Le distillat de chaque filtrat contenait toujours de l'ammoniaque nitrogénée.

On a expérimenté plusieurs dentifrices à base d'ammoniaque. Kerr et Kesel⁽⁴⁵⁾ ont trouvé une réduction de 10% dans l'incidence de la carie, comparativement à l'usage d'un dentifrice ne contenant pas d'ammoniaque.

Les dentifrices contenant du fluorure

de sodium semblent être d'aucune efficacité contre la carie.⁽⁴⁶⁾ Zander⁽⁴⁷⁾ rapporte une réduction de la carie de 50 à 55% avec l'emploi d'un dentifrice contenant 500 unités de pénicilline par gramme de poudre. La pénicilline a un effet antibiotique certain, mais trop bref sur la flore buccale. Pour une réelle efficacité, il reste à trouver le moyen de maintenir plus longtemps l'effet antibiotique de la pénicilline.

Ces expériences ont leur valeur, mais elles ne sont pas encore assez concluantes. Aussi, il faut attacher beaucoup plus d'importance au brossage des dents immédiatement après les repas qu'au choix de tel ou tel dentifrice.

Conclusions

En rendant plus spécifique une phrase d'Alexis Carrel, on peut dire que plus l'homme s'éloignera de la nature, plus la chirurgie dentaire aura à faire. Avec une alimentation molle, sans consistance, où les conserves dominent, les dents ne remplissent plus leur rôle physiologique de trituration et de mastication. Les dents sont devenues un peu objets de musée et on attache plus d'importance à leur esthétique qu'à leur fonction. A cette hypofonction, la nature répond par une diminution de la force et de la structure de l'appareil masticateur et des dents en particulier.

Parmi les nouveaux moyens de contrôle et de prévention, le fluor est l'élément de choix qui peut compenser cette déficience fonctionnelle. Toutefois, cette compensation artificielle ne serait pas nécessaire, si l'on redonnait aux dents leur véritable tâche qui est de mastiquer.

BIBLIOGRAPHIE

1. Dietz, V. H.: In Vitro production of plaques and caries. *J. D. Res.* 22:423 Dec. 1943.
2. Dean, H. T.: Dental caries and fluorine. Washington, D.C., Am. Assoc. Advancement Sci., 1946, p. 5.
3. Stephan, R. M.: Some local factors in the development of cavities: plaques, acidity, aciduric bacteria, proteolytic bacteria. *J. D. Res.* 27:96 Feb. 1948.
4. Burnett, G. W. and Scherp, H. W.: The effect on dentin of proteolytic and acidogenic bacteria isolated from the carious lesion. *J. D. Res.* 32:46 Feb. 1953.
5. Klinger, I. J.: A biochemical study and differentiation of oral bacteria with special reference to dental caries. *1. Allied D. Soc. J.* 10:141 July 1955.
6. Orland, F. J., Blayney, J. R., Harrison, R. W., Reyniers, J. A., Trexler, P. S., Wagner, M., Gordon, H. A., Luckey, T. D.: Use of germ-free animal technique in the study of experimental dental caries. *J. Dent. Res.* 33:147, 1954.
7. McIntosh et al. *Brit. J. Exper. Path.*, 3, 138, 1922, id. 1924, ibid 5, 175; Fosdick and Starke. *J.D.R.*, 18:417, 1939; Trask et al. *J.A.D.A.*, 27:1013, 1940.
8. Stephan, R. M. and Hemmens, E. S.: Studies of changes in pH produced by pure cultures of oral microorganisms. *J. D. Res.* 26:15 Feb. 1947.
9. Fosdick, L. S., Campaigne, E. E. and Faucher, D. E.: Rate of acid formation in carious areas: the etiology of dental caries. Illinois, D. J. 10:85 March 1941.
10. Fosdick, L. S.: The mechanism of caries control. *Fort. Rev. Chicago D. Soc.* 15:5, Feb. 15, 1948.
11. Black, C. V.: An investigation of the physical characters of the human teeth relation to their diseases, and to practical dental operations, together with the physical characters of filling materials. *D. Cosmos* 37:353 May 1895.
12. Bradel, S. F. and Blayney, J. R.: Clinical and bacteriologic studies on dental caries. *J.A.D.A.* 27:1601 Oct. 1940.
13. Stephan, R. M., and Miller, B. F.: A quantitative method for evaluating physical and chemical agents which modify production of acids in bacterial plaques of human teeth. *J. D. Res.* 22:45 Feb. 1943.
14. Garvin, M. H.: A practical analysis of regular dental prophylaxis. *J. Am. Dent. A.* 20:27, 1933.
15. Stephan, R. M. and Miller B. F.: The effect of synthetic detergents on pH changes in dental plaques. *J. D. Res.* 22:53 Feb. 1943.
16. Bibby, G. G.: A new approach to caries prophylaxis. *Tufts Dental Outlook* 15:4, 1942.
17. Fosdick, L. S.: Reduction of the incidence of dental decay. Immediate tooth brushing with a neutral dentifrice. *J. Am. Dent. A.* 40:133, 1950.
18. Klein, H. and Knutson, J. Q.: Effect of Ammoniacal silver nitrate on caries in the first permanent molar. *J. Am. Dent. A.* 29:1420, 1942.
19. Gottlieb, B. B.: Dental caries, Philadelphia, Lea and Febiger, p. 230, 1947.
20. Pelton, W. J.: The effect of zinc chloride and potassium ferrocyanure as a caries prophylaxis. *J. Dent. Res.* 29:756, 1950.
21. Deatherage, C. F.: Mottled enamel from the Standpoint of the Public Health Dentist. Fluorine and Dental Health. Publication of the Am. Assoc. for Advancement of Sc., No. 19, 81, 1941.
22. Dean, H. T.: Endemic Fluorosis and its Relations to Dental Caries. *Public Health Reports.* 53:1443-52, August 19, 1938.
23. McClure, F. J.: Nondental Physiologic Effects of trace quantities of fluorine. Dental Caries and Fluorine. Washington, D.C. Amer. Assoc. for the Advancement of Sc. p. 74, 1946.
24. Heyroth, F. F.: Toxicological Evidence for the Safety of the Fluoridation of Public Water Supplies. *Am. J. Pub. Health.* 42:1568, December, 1952.
25. Dean, H. T., A. F. Arnold Jr., and Elvom, E.: Domestic Water and Dental Caries Experience. *Pub. Health Rep.* 57:1115-1179, August 7, 1942.
26. McCann, H. C.: Reaction of Fluoride ion in the Hydroxapatite. *J. Biol. Chem.* 201:247, 1953.
27. Suess, P. H. and Fosdick, I. S.: The solubility of normal and fluoridized enamel. *Jour. Dent. Res.* 30:177, 1951.
28. Bibby, B. C. and Van Kesteren, M.: The Effect of Fluorine on mouth bacteria. *J. D. Res.* 19:391, 1950.
29. Arnold, F. A. Jr.: Tale of fluoride in preventive dentistry. *J.A.D.A.* 30:499-508 April, 1943.
30. Report of committees in the use of Fluorine in the control of caries, U. of Michigan Workshop of the Evaluation of Dental Caries Control Techniques; Ann Arbor, Mich., p. 36, 1947.
31. Brown, H. K., McLaren, H. R., Stewart, B. J.: Brantford Fluoridation Caries Study 1954 Report. *J.C.D.A.*, 20:11:585, Nov. 1954.
32. Leone, N. C., Arnold, F. A., Limmernan, E. R., Geiser, F. B., Lieberman, J. E.: Review of the Bartlett-Cameron Survey. A ten year fluoride study. *J.A.D.A.*, 50:3:277, March, 55.
33. Resolution Passed by the Board of Governors of The Canadian Dental Association, May 21, 1955, *J.C.D.A.*, 21:7:408, July, 1955.
34. Proceedings of 87th Annual Meeting of the Canadian Medical Association (June 1954).
35. Resolution Passed by the Canadian Public Health Assoc. May 31-June 2nd, 1954, *Can. Jour. of Pub. Health.* 45:7:316, July, 1954.
36. "Fluoruration aux Etats-Unis": *J.C.D.A.*, 22:11:698, Nov. 1956.
37. Ast, D. B., Finn, S. B., and McCaffrey, I.: The Newburgh-Kingston caries fluoride study. *J. Am. Dent. A.* 42:188, 1951.
38. Knutson, J. W.: Sodium fluoride solutions, technic for application to the teeth. *J. Am. Dent. A.* 36:37, 1948.
39. Galagan, D. J. and Knutson, J. W.: Effect of topically applied fluoride on dental caries experience, VI. *Public Health Rep.* 63:1215, 1948.

40. Kite, O. W., Shaw, J. H., Sognnaes, R. F.: An influence on dental caries incidence produced in rats by tube-feeding, *J. Dent. Research* 29:668, 1950.

41. Beeks, H., Jensen, A. L., and Millarr, C. H.: Rampant Dental Caries: prevention and prognosis: a five year clinical survey, *J. Am. Dent. Assoc.* 31:1189, 1944.

42. Snyder, M. L.: Correlation and comparison of laboratory findings with clinical evidence of caries activity, *J. Am. Dent. A.* 29:2001, 1942.

43. Volker, J. F.: An outline of caries prevention, *J. New Jersey, D. Soc.* 19:8, 1947.

44. Kesel, R. G., et al.: Biologic production and therapeutic use of ammonia in the oral cavity in relation to dental caries prevention, *J. Am. Dent. A.* 33:695, 1946.

45. Kerr, S. W., and Kesel, R. G.: Two year caries control study utilizing oral hygiene and an ammoniated dentifrice, *J. Am. Dent. A.* 42:180, 1951.

46. Bibby, B. G.: Fluoride mouth washes, fluoride dentifrices, and other use of fluorides in control of dental caries, *J. Dent. Research* 27:367, 1948.

47. Zander, H.: Effect of a penicillin dentifrice on caries incidence in school children, *J. Am. Dent. A.* 40:569, 1950.

Nouvelles de l'Association

Plan d'épargne de retraite de l'A.D.C.

La décision probablement la plus importante qu'ait prise le Comité Exécutif à son assemblée du 25 et 26 novembre a été l'adoption du nouveau plan d'épargne de retraite de l'Association dentaire canadienne. Des spécialistes de ce domaine avaient soumis un plan par écrit et assistaient à la réunion à titre de conseillers. La discussion de cette question a duré presque toute la première journée.

Tous les membres de l'A.D.C. ont reçu à date une lettre donnant des explications au sujet de ce plan accompagnée d'un livret renfermant tous les détails et une formule d'application; de cette façon, les dentistes du Canada pourront profiter sans tarder des changements qui ont été apportés récemment par le gouvernement fédéral à l'impôt sur le Revenu pour permettre la déduction de sommes consacrées à un fonds de pension approuvé.

Le plan d'épargne de retraite de l'Association dentaire canadienne est un plan d'épargne établi par l'Association à l'intention expresse de ses membres comme un supplément ou changement au plan d'assurance-pension de l'Association dentaire canadienne déjà en existence. Ce nouveau plan mérite qu'on l'étudie attentivement aussitôt que possible.

Liste d'honoraires du Ministère des Affaires des Vétérans

Un autre item important à l'agenda du Comité Exécutif était la révision de la liste des honoraires du Ministère des Affaires des Vétérans.

On avait amassé des listes d'honoraires de la plupart des provinces pour s'en servir comme base dans cette révision des honoraires du Ministère. Plus tard, des délégués du Comité Exécutif ont rencontré à ce sujet des fonctionnaires du Ministère à Ottawa. On publiera cette liste de nouveaux honoraires dans les Nouvelles de l'Association quand elle aura reçu sa sanction officielle d'Ottawa.

Aide pécuniaire aux étudiants en chirurgie dentaire

A son assemblée de novembre dernier, le Collège des Chirurgiens-Dentistes de la province de Québec a voté la somme de \$25,000 pour être prêtée aux étudiants qui auront complété leur deuxième année dans une faculté dentaire.

Thorold conserve la fluoruration

Les citoyens de Thorold, Ontario, ont récemment voté de continuer la fluoruration de leur eau de consommation. Le vote s'est établi à 1319 pour la continuation et 756 contre.

Divers

Les Américains dépensent un quart de million pour des produits d'hygiène buccale

Une enquête conduite récemment sur les déboursés faits par les consommateurs dans des pharmacies révèle des chiffres intéressants. En 1956, les Américains ont dépensé \$155 millions pour des dentifrices, \$15 millions pour des nettoyeurs et des colles à dentiers et \$94 millions pour d'autres marchandises d'hygiène buccale, tels que brosses à dents, rince-bouches, gargarismes, etc. Le montant total est de \$11 millions supérieur à celui de l'année précédente et presque de \$23 millions sur 1954. Plusieurs millions de dollars ont été consacrés à la réclame des dentifrices.

On peut figurer que les Canadiens dépensent dix pour cent de ces montants dans le même but.

Une conférence garantit son succès

Ceci est un extrait des "Dental Health Highlights" au sujet de la Première Conférence d'hygiène dentaire de Mexico, qui a eu lieu récemment.

"Une particularité de l'inscription voulait que la Conférence garantisse son efficacité. D'une façon tout à fait anonyme, on avait remis au Ministère de la Santé d'Etat un chèque certifié de \$500. en stipulant que \$100. devaient être donnés aux premiers cinq

dentistes qui feraient une déclaration écrite à l'effet que "la conférence n'en avait pas valu la peine et qu'ils n'en avaient pas reçu pour leur argent. "Il n'y eut aucune réclamation dans les dix jours fixés après la Conférence et le chèque a été retourné à son donateur."

Croix-Bleue

On recevra sans doute des détails au sujet des changements que se propose de faire la Croix-Bleue dans les bénéfices qu'elle accorde à ses souscripteurs. Voici néanmoins un message préliminaire du secrétaire-trésorier de l'Association Hospitalière de l'Ontario:

"Quand la Commission des Services Hospitaliers de l'Ontario commencera son plan d'assurance-hospitalisation le 1er janvier 1959, la Croix-Bleue offrira un plan à bénéfices semi-privés qui est spécialement destiné à compléter la protection essentielle (salles publiques ordinaires) dont la Commission fera profiter les citoyens. Cela veut dire que les souscripteurs semi-privés de la Croix-Bleue pourront continuer à jouir de la protection qu'ils avaient depuis toujours.

Le nouveau plan est constitué de façon à ce qu'il ne chevauche pas sur ou ne double pas les bénéfices offerts par le système d'assurances de la Commission."

Notes sur l'organisation de la dentisterie en Norvège

N. de la R. *On sait que l'été dernier le secrétaire de l'Association, le docteur Don W. Gullett, a entrepris des enquêtes dans différents pays d'Europe sur l'organisation de la dentisterie. Comme les visites qu'il a faites étaient nécessairement courtes, il n'a pu faire un relevé complet des conditions dentaires de chacun de ces pays. C'est pourquoi, il a intitulé ces rapports "notes". Il nous présente actuellement des "notes" sur la Norvège et publiera de temps en temps des rapports sur d'autres pays.*

Population: 3,500,000

Nombre de dentistes: 2,100 (dont 21½ % sont des femmes)

Proportion à la population: 1/1666.

Service dentaire public

Ces observations sont le résultat d'une étude de la loi adoptée en 1949 par la Norvège au sujet du service dentaire public et des règlements du service dentaire municipal d'Oslo et de leur application dans le domaine public.

Avec l'adoption de cette loi, comme dans d'autres pays, la Norvège manquait du personnel nécessaire pour prodiguer les services. Ne possédant qu'une seule école dentaire formant environ 50 nouveaux dentistes chaque année, il fallut trouver des

moyens pour augmenter rapidement le nombre des dentistes. Pour parer à cette lacune, le gouvernement norvégien assumait la responsabilité financière d'envoyer des étudiants dans des pays étrangers. Actuellement, il y a à peu près 200 étudiants aux études à l'étranger. La plupart de ces futurs dentistes fréquentent les écoles anglaises. A partir de cette année, le gouvernement entreprend de doter le pays, en construisant de nouveaux édifices, de disponibilités plus considérables pour l'enseignement de la dentisterie et, avant longtemps, tous les étudiants pourront faire leurs études chez eux. Cette initiative a amélioré rapidement la proportion du nombre des dentistes par rapport à la population. En 1955, cette proportion était d'un dentiste par 1842 habitants et on s'attend que d'ici cinq ans, la proportion soit de un par 1450. Malgré ce progrès rapide, le pays manque encore de dentistes.

C'est en 1910 qu'on a commencé à traiter gratuitement les écoliers des grands centres de Norvège. La loi de 1949 prévoyait l'organisation graduelle des régions éloignées pour des services semblables, mais gardait le statu quo pour les grands centres, qui ne recevront qu'en dernier ces nouveaux services. Ce nouveau plan fonctionne à peu près partout, mais seulement une région (Finmark), qui est la plus au Nord, est complètement organisée pour ce service. La loi statue que le service dentaire public fonctionnera dans tout le pays en 1965.

La clause no 1 de la loi met l'accent sur la gratuité des services. Le dentiste employé dans le service doit y consacrer 1,000 heures par année. On lui permet de travailler durant 800 heures par année pour les enfants d'âge pré-scolaire, les femmes enceintes et les adultes. On donne la préférence aux femmes enceintes et aux enfants d'âge pré-scolaire. Le plan prévoit de rendre éligibles les enfants de 3 à 6 ans dès que le gouvernement pourra le faire. Les groupes d'enfants de 6 à 18 ans sont traités plus ou moins rapidement selon l'urgence de leurs besoins.

Les autres non compris dans les groupes de 6 à 18 ans doivent payer des honoraires fixés par le gouvernement et qui sont supposés ne représenter que le coût des services. Cette échelle d'honoraires se chiffre environ aux trois-quarts des honoraires perçus en clientèle privée.

Comme on peut le voir dans le texte de la loi, l'administration du plan est d'une extrême simplicité. C'est un système décentralisé. Le gouvernement nomme un directeur des services dentaires pour chacun des comtés (20) et ceux-ci ont chacun un comité des services dentaires. On m'a dit que le Service dentaire public et que le Service dentaire des Ecoles sont tous deux dirigés au gouvernement par un dentiste assisté

d'une secrétaire et de deux filles de bureau. Les projets pour commencer et mener le service doivent se conformer aux intentions formulées dans la loi et être approuvés par le Ministère.

Les dépenses occasionnées par le fonctionnement du Service dentaire public sont défrayées par le gouvernement et les comtés. Le gouvernement paie de 60 à 80% des dépenses dans les régions rurales, selon les disponibilités pécuniaires de celles-ci. Dans les municipalités, le gouvernement contribue 30% du coût total. Ces dépenses consistent en salaires, en honoraires et en frais de voyages pour les officiers dentaires du comté. Le Ministère peut fournir des subsides particuliers pour l'achat d'équipement dans des comtés qui mettent le service en marche. On donne un octroi annuel de 5 kronas (5 kronas au dollar, en 1957) pour chaque personne résidant dans un district local et ayant droit au service dentaire gratuit. Les districts locaux doivent solder le loyer des cliniques et les dépenses qui dépassent le montant des octrois.

Un personnel salarié voit au fonctionnement du Service dentaire public dans les cliniques. Actuellement, quelques 75 dentistes travaillent dans le service. En comparant les honoraires des dentistes avec ceux d'autres professionnels de même classe, on prétend que les dentistes sont bien rémunérés. L'échelle des salaires oscille entre un minimum de 27,000 à 32,000 kronas. De plus, le gouvernement contribue 1900 kronas par année à un fonds de retraite pour les dentistes et cette somme n'est pas sujette à l'impôt. On m'a dit que cette contribution constitue une pension égale aux plus fortes pensions payées en Norvège. A la mort du dentiste, sa veuve reçoit annuellement 9,000 kronas plus 10% pour chaque enfant. Quand il traite des adultes, un dentiste du service peut choisir de recevoir 2,000 kronas de moins en salaire et garder 20% des honoraires qu'il reçoit de ceux-ci. Le service ne compte pas actuellement de spécialistes et les cas qui ont besoin de traitements spéciaux sont référés aux praticiens privés. Cependant, on songe à adjoindre à chaque comté un spécialiste en chirurgie et un autre en orthodontie pour agir comme consultants. L'Association dentaire de Norvège a approuvé la loi qui établissait le Service dentaire public. Le gouvernement a accepté en bloc les demandes de l'Association au sujet des salaires et des autres détails.

Les salaires sont égaux à ceux payés aux officiers médicaux de district, aux capitaines de marine et aux ingénieurs de première classe. Ces salaires sont considérés comme étant d'une bonne moyenne.

Le groupe de 6 à 18 ans, selon ses besoins, reçoit un service complet à l'exception des

services spécialisés. Cela veut dire que ces enfants bénéficient de toute la dentisterie opératoire et de la chirurgie ordinaire.

Tous les dentistes qualifiés sont éligibles pour le service.

L'éducation en hygiène dentaire se fait sous la direction de la Division dentaire du Ministère. On fournit aux dentistes du service les pellicules, les pamphlets, etc, dont ils peuvent avoir besoin. On centralise à dessein tout ce domaine pour uniformiser et tenir à la page ce champ d'activité.

Les autorités gouvernementales déclarent que cette organisation n'est pas la dentisterie socialisée, ni même une tentative de la socialiser plus tard. Ils disent que quand le plan fonctionnera partout et que, s'il en a les moyens, le gouvernement songera à en faire bénéficier gratuitement tous les enfants jusqu'à 21 ans, mais pas au-delà.

Tout en étendant le service jusqu'à cet âge, les autorités pensent que l'exercice privé constitue la meilleure formule pour le traitement des adultes et qu'il faut mettre tout en oeuvre pour le sauvegarder.

On nous a expliqué, par cet exemple, le fonctionnement du plan Finmark, qui est la région la plus nordique et la moins peuplée du pays et le seul comté qui jouit dans sa plénitude du Service dentaire public. Sa population est de 50,000 habitants. Avant la guerre, il y avait six dentistes dans ce comté. Maintenant, il y a 27 dentistes, dont 4 sont en pratique privée et le reste dans le service. Et les habitants de Finmark aimeraient bien avoir encore plusieurs praticiens privés. On voit donc comment ce service créé une demande pour des soins dentaires.

Personnel auxiliaire

Les techniciens dentaires n'ont pas de législation spéciale en Norvège mais sont régis par une loi qui embrasse tous les corps de métiers, tels que menuiserie, maçonnerie, etc. La loi exige que tous les gens de métier aient cinq ans d'apprentissage. La formation des techniciens dentaires est aussi sur une base de cinq ans, dont un se passe dans une école technique où s'enseignent tous les métiers. Cette école technique n'a aucune affiliation avec la faculté dentaire. Si le candidat réussit ses examens, il reçoit le salaire d'un technicien, mais durant deux ans, il doit travailler sous la direction d'un maître technicien ou d'un dentiste. A la fin de cette période de probation, il peut subir des examens pour devenir maître-technicien et ouvrir son propre atelier. L'entraînement est strict et contrôlé. Un dentiste peut se former un technicien, et la chose arrive occasionnellement, mais ce technicien doit quand même subir les examens. L'Association des Techniciens dentaires fixe les qualifications pour être admis à l'appren-

tissage. Actuellement, il y a pénurie de techniciens et l'Association des Techniciens songe à rendre plus élastiques les exigences d'admission.

Hygiénistes dentaires

Leur nombre est assez restreint (20) et le cours d'études qu'elles doivent suivre n'est pas apte à former de vraies hygiénistes dentaires. Elles ont un entraînement clinique accompagné de cours, mais leur programme académique est assez flou. En 1951, le gouvernement a songé à instituer à l'intention des hygiénistes dentaires un plan semblable à celui qui existe en Nouvelle-Zélande. L'Association dentaire de Norvège s'opposa à cette initiative et, depuis ce temps, il n'en est plus question. On croit que le gouvernement établira un cours en bonne et due forme pour les hygiénistes dentaires.

Service dentaire dans les écoles d'Oslo

Comme on l'a vu plus haut, le service dentaire a été organisé dans les écoles de Norvège en 1910. Le Service dentaire public (1949) remplacera éventuellement ce dernier. Le Service dentaire public s'étend graduellement dans les comtés du nord et dans ceux du sud. Le Service dentaire des Ecoles occupe actuellement plus de dentistes et il existe presque partout dans les municipalités du sud. Environ 300 dentistes y consacrent tout leur temps (110 à Oslo, qui a une population d'environ 300,000 habitants). Plusieurs femmes dentistes travaillent dans ce service. Au moins 500 dentistes y travaillent à temps partiel. Ce service est sous la responsabilité des municipalités et le gouvernement contribue au paiement des salaires des dentistes et de leurs assistantes (25% dans les régions rurales et 12½% dans les centres urbains). Les patients jusqu'à l'âge de 18 ans y sont traités gratuitement. On considère qu'un dentiste, dans son année, peut traiter 900 patients, en y consacrant tout son temps. Le service est libre et on calcule que 70% des enfants d'Oslo y reçoivent des traitements réguliers.

On tente de tirer le maximum de rendement de l'équipement de ces cliniques, qui fonctionnent six jours par semaine (moins le samedi après-midi) et 43 semaines par année. Deux équipes de dentistes se relaient de 8.30 hrs a.m. à 2.30 hrs p.m. et de 2.30 hrs p.m. à 9.00 hrs p.m.

Les jeunes gens de 18 à 20 ans se font traiter dans des cabinets privées d'Oslo et le Fonds de Maladie rembourse les honoraires dans une proportion de 80%. Nous avons visité plusieurs de ces cliniques. Elles sont très bien équipées et on sent que les traitements qui s'y donnent sont de la meilleure qualité. La location de ces cliniques

montre que la santé dentaire jouit d'une très grande faveur. Il y a environ 70 de ces cliniques à Oslo. On considère comme spécialité la chirurgie buccale et l'orthodontie. Dans ces cliniques, on donne des consultations en orthodontie et les traitements sont prodigués chez les praticiens privés. En plus de la clinique centrale où on fait des traitements spéciaux et où siège l'administration du service, il y a trois genres de cliniques:

- 1) dans les écoles, où ces cliniques font partie de la clinique de santé. Les cliniques occupent une place de choix dans les écoles.
- 2) dans des centres de bien-être, qui jouent plusieurs rôles. Par exemple, on y garde les enfants, quand la mère est malade.
- 3) dans le centre d'urgence situé au coeur de la ville, où le gouvernement possède un hôtel (chose assez étrange). Ce centre est ouvert à certaines heures, comme le soir, les jours de fête, les dimanches, etc, pour s'occuper des cas d'urgence dentaire; ces patients sont ensuite référés à leur dentiste particulier. Les honoraires sont fixés pour chaque genre de traitement. Tout le monde, même les touristes, peuvent utiliser ce centre d'urgence.

Recherches

L'Institut Norvégien des Recherches dentaires, à Oslo, est un petit laboratoire qui est bien équipé et où il se fait un excellent travail. Il est soutenu financièrement grâce à des tirages de football, qui lui rapportent 250,000 kroner par année (les recherches médicales sont financées de la même façon pour un montant de 800,000 kroner par année). Son personnel se compose d'un directeur, de trois dentistes spécialisés en recherches, de deux associés aux recherches qui y travaillent à temps partiel, de trois techniciens, d'une secrétaire et d'un médecin qui se consacre aux recherches dentaires. Le rendement de ce laboratoire est remarquable.

Enseignement dentaire

La Norvège a une faculté dentaire, le Collège Royal Dentaire, installé à Oslo et les plans sont prêts pour une autre à Bergen, où elle sera construite. La faculté d'Oslo est une institution d'Etat et celle de Bergen fera partie de l'Université de Bergen. On croit qu'avec le temps, le Collège Royal Dentaire fera partie de l'Université d'Oslo. Les qualifications nécessaires à l'admission à l'école dentaire sont les mêmes que celles requises par l'Université d'Oslo. Il faut 7 années de cours primaire et 5 années de cours secondaire; de plus, tous les candidats, comme tous ceux de l'Université, doivent subir un examen d'admission.

On dit que les meilleurs candidats se dirigent vers la médecine et la dentisterie. Depuis des années, les étudiants qui sont

admis aux études obtiennent les meilleures notes. On explique cet état de choses par le fait que la population de Norvège a beaucoup de respect pour les professions de santé. Le cours d'études dentaires est de 4 ans et chaque année compte 41 semaines. On s'attend à ce qu'on porte à cinq ans la durée du cours dentaire.

Chaque classe se compose de 50 élèves et ce chiffre ne peut pas répondre aux besoins. Comme on le disait plus haut, le gouvernement, depuis plusieurs années, défraie les dépenses d'étudiants qui sont envoyés à l'étranger. Pour jouir de ce privilège, l'étudiant promet d'entrer au service de l'Etat (pour 2 ans) après la fin de ses études. Après avoir terminé son cours à l'étranger, l'étudiant doit passer six mois à l'école d'Oslo et subir un examen (environ 90% de ces nouveaux dentistes réussissent l'examen). S'il essuie un échec, l'étudiant doit rester à l'école jusqu'à ce qu'il puisse réussir l'examen. On n'aime pas beaucoup ce système d'avoir recours à des écoles étrangères, mais on le préfère au risque de former un grand nombre d'élèves avec des moyens de fortune. On cessera d'agir de la sorte, quand on disposera de facilités plus grandes pour l'enseignement.

Depuis 1945, tout l'enseignement est gratuit en Norvège, y compris l'enseignement dentaire. Tous les instruments appartiennent à l'école.

Notre visite s'est située durant la période des vacances, mais on s'arrangea pour nous faire visiter l'école et nous expliquer la façon, dont l'enseignement s'y donne. La faculté est installée dans un bel édifice, qui est maintenant beaucoup trop petit. On calcule qu'il faut à la Norvège de 110 à 120 diplômés, par année. On projette de doubler la superficie de la bâtisse actuelle, mais on n'entreprendra pas cet agrandissement avant que la faculté de Bergen soit terminée. Tout l'équipement est moderne et nulle part dans l'école il nous fut donné d'apercevoir une installation désuète.

L'enseignement se donne dans huit services, à savoir: anatomie, physiologie, péodontie, orthodontie, périodontie, chirurgie, dentisterie restaurative et prothèse. La chimie, la pathologie, la bactériologie, la pharmacologie et la médecine buccale font l'objet de cours spéciaux. La tendance en Norvège est de placer l'accent sur la dentisterie des enfants et le curriculum des études accorde beaucoup d'importance à la péodontie et à l'orthodontie.

Commentaires

Les observations qui précèdent sont positives, car celles ont été faites sur place et à l'aide de textes de loi, qui ne peuvent pas tromper. Mais ces constatations nous lais-

sent des impressions, qui, elles, sont sujettes à erreur, surtout quand la visite n'a duré que quelques jours.

1) L'Association dentaire norvégienne a travaillé en étroite collaboration et dans un atmosphère des plus conciliants avec le gouvernement à l'établissement des services dentaires. Les relations entre l'Association et le Gouvernement paraissent excellentes.

2) La population de Norvège attache beaucoup d'importance à l'hygiène dentaire, si on en juge par le respect que le public porte aux membres de la profession. Cette impression ne peut pas être accidentelle. Un guide a soulevé la question en nous conduisant au travers la ville, tout en ne sachant pas qu'il s'adressait à des dentistes.

3) On a noté l'air de contentement des dentistes travaillant dans le Service dentaire public. On se rendait compte qu'ils n'étaient pas blasés. L'état de l'équipement et le comportement du personnel montrent au public qu'il peut s'attendre aux meilleures traitements chez les praticiens privés, ce qui, nous a-t-on dit, est un de ses objectifs.

4) A une certaine occasion, on a souligné que l'établissement d'une clinique du Service dentaire public dans un certain endroit, pourrait faire du tort à un dentiste, qui aurait son cabinet à cette même place, parce qu'il perdrait sa clientèle. En discutant cette question, on nous a montré qu'une telle chose n'était pas possible car, si le dentiste qui réside à l'endroit où s'ouvre la nouvelle clinique, est compétent, on lui offrira le poste dans le service. De toute façon, le service se contente de traiter les enfants et l'expérience montre que là où fonctionne une clinique du service, l'intérêt des adultes pour la chose dentaire augmente sensiblement.

5) L'éducation en hygiène dentaire ne joue pas un rôle aussi important dans le système de Norvège que celui que lui accordent les dirigeants de l'hygiène dentaire de notre continent.

6) On est assuré que l'enseignement donné dans la faculté d'Oslo est excellent. Il a toutefois certaines différences avec celui qui est donné en Amérique. Le Collège Royal Dentaire est une institution indépendante et, à cause de cela, les sciences de base sont enseignées par des professeurs du Collège lui-même. Celui-ci n'a pas d'affiliation avec l'Université ou avec la faculté de Médecine de l'Université. De même, il n'a pas de contacts avec les hôpitaux.

7) Si on s'occupe des pourcentages, on se rend compte que les chiffres qu'on nous a cités montrent qu'environ 18% des dentistes de Norvège travaillent dans un des deux services du gouvernement. Ensuite, quelques 500 autres dentistes sont employés

partiellement dans le Service dentaire municipal (écoles). Le solde est en clientèle privée.

8) La dentisterie de Norvège fait de réels progrès. On sent que la profession surveille tous les moyens possibles d'améliorer tous

les domaines de ses activités.

9) Je suis profondément reconnaissant à tous ceux qui m'ont accueilli d'une façon très sympathique et qui m'ont consacré de leur temps pour me fournir tous les renseignements nécessaires à mon enquête.

REVUE DE LA PRESSE

S.-C. NADLER. — Les formes du bruxisme.

1. Le bruxisme ou bruxomanie affecte un tel pourcentage de patients que l'on peut dire que chacun de nous en est ou en sera atteint. Cet état est observé tout au long de la vie humaine, quel que soit l'âge. Il peut se transmettre tout au long de plusieurs générations, sans pour cela que nous sachions quelle part l'hérédité ou l'imitation ont dans ce fait.

2. L'étiologie du bruxisme se propose de rechercher si la cause est locale, générale, psychologique, professionnelle. Beaucoup de causes apparentes n'ont pas résisté à une étude attentive. On devrait faire le départ entre les facteurs prédisposants et les causes réelles.

3. Il est respectueusement demandé au Bureau de la documentation de l'*American Dental Association* de préciser que le terme de bruxisme est l'expression servant à désigner toutes les habitudes anormales de mastication y compris celles qui consistent à serrer les dents sans raison, à quelque moment qu'elles surviennent. La bruxomanie n'est qu'un cas particulier du bruxisme.

4. La profession dentaire doit être plus attentive aux incidences du bruxisme, surtout dans les cas de parodontoses. L'inconscience du bruxisme n'aide pas toujours à le diagnostiquer pendant l'examen.

5. Il semble bien que les causes soient d'ordre psychologique et relèvent, pour une grande part, de la personnalité du patient.

6. Des actes, jusque là considérés comme innocents, sont désormais considérés comme concomitants avec des actes de bruxisme, tels le mâchonnement de "chewing-gum", le serrage et le mordillement d'objets divers, crayons, pailles, allumettes, etc. Une analyse poussée montre qu'ils font partie du champ croissant du bruxisme.

7. Il semblerait que l'acte de bruxisme fournit à l'individu l'occasion de libérer son corps des frustrations et des tensions qui l'obsèdent.

8. Le rôle des tensions physiques et mentales dans l'apparition du bruxisme dans la vie quotidienne est hautement significatif. La toile de fond que représentent les occupations professionnelles des patients affligés de bruxisme anormal doit être examinée pour permettre de déterminer comment cette tension peut se libérer par des voies moins destructrices.

9. On recommande de procéder à des études systématiques chez les enfants atteints de bruxisme, en tenant compte:

- du genre d'enfant observé,
- des relations entre bruxisme et autres habitudes (suction du pouce . . .),
- des similitudes avec d'autres enfants,

afin de déterminer s'il est possible de prévenir cet état et de réduire les ravages qu'il détermine.

10. Des recherches et des travaux de laboratoire d'ordre psychologique et chimique sont recommandés dans les cas où des actes, innocents en apparence, et mettant en cause les mâchoires et les dents, tendent à dégénérer en bruxisme, de telle façon que le rôle apparemment joué par les contraintes du subconscient puisse être évalué à la fois par la profession dentaire et médicale. (*Jour. Amer. Dent. Assoc.*, mai 1957).

E. LAUTENBACH. — Les modifications des formules sanguines au cours des actes d'origine dentaire.

L'auteur rapporte ses observations à propos des formules sanguines et des vitesses de sédimentation intéressant 140 abcès sous-périostés et sous-muqueux d'origine dentaire. Chez 108 patients, ces examens de laboratoire ont été pratiqués à deux reprises, soit au moment de la période aiguë et après disparition des phénomènes inflammatoires. Pendant la phase aiguë, la vitesse de sédimentation était normale dans 55% des cas. Dans 45% des cas, elle était augmentée, pour revenir à la valeur normale à la fin du traitement chez la moitié de ces sujets.

Dans 65% des cas, le nombre des leucocytes était augmenté; après disparition des phénomènes inflammatoires, ce nombre est redescendu à sa valeur initiale dans 73% des cas, alors qu'une leucocytose a persisté dans 27%. D'une manière générale, la leucocytose a varié entre 8,000 et 15,000. Le nombre des leucocytes donne une indication sur l'importance de l'abcès et la résistance du sujet.

D'une manière générale, la proportion des éléments de la formule sanguine ne donne guère d'indications utiles au sujet du mode réactionnel de l'organisme: pas de particularités intéressant les éosinophiles, la segmentation des noyaux, les monocytes, ou encore la déviation de la formule d'Arneth.

Parfois on a observé une sédimentation normale en même temps qu'une leucocytose. Il semble que cette dernière soit plus importante à considérer dans les infections pyogènes, que la vitesse de sédimentation.

Le principe de l'évolution des infections pyogènes formulé par Schilling n'est que rarement observé dans les cas d'infections pyogènes (phase de combat neutrophile, réaction monocyttaire, phase de guérison lymphocyto-éosinophile). (*Revue mensuelle Suisse d'Odontologie*, mars 1957, pp. 205-229.—résumé par A.-J. Held).

L'INFORMATION DENTAIRE 5-12-57

Nouveau au sujet de la carie dentaire

Dans les sous-sol de la faculté de Médecine buccale de l'Université Harvard, le docteur James H. Shaw et ses assistants, durant plus de dix ans, ont fait des recherches en biochimie sur des rats blancs, en se servant de nourriture tantôt riche, tantôt pauvre en sucre. Leurs recherches avaient deux buts: trouver jusqu'à quel point certaines variétés de sucres favorisent la carie et mettre au point des techniques pour la prévenir. Ce projet de recherches était financé par la Sugar Research Foundation Inc. (organisme fondé par l'industrie du sucre) grâce à des subsides de l'ordre de \$57,000. Le docteur Shaw vient de publier les résultats de ses recherches dans le *Journal de l'Association dentaire américaine*.

1) La carie dentaire est causée uniquement par la nourriture qui séjourne dans la bouche. Cette constatation s'est prouvée en nourrissant les rats directement dans l'estomac; même gavés de sucre, les rats alimentés de cette façon ne souffraient pas de carie dentaire.

2) Le sucre en solution produit peu de carie; le sucre granulé, comme on s'en sert sur les fruits ou dans les céréales, cause beaucoup plus de carie.

3) Parmi les diverses variétés de sucres, le fructose (venant des fruits), le glucose (venant du raisin et des amidons), le sucrose (sucre de table provenant de la canne à sucre ou des betteraves), le lactose (extrait du lait) et la maltose (venant de la bière) sont les plus générateurs de carie dentaire. Même un régime pauvre en sucre, mais riche en hydrates de carbone, produit les mêmes effets. Il n'y a pas d'avantages à remplacer le sucre raffiné par le sucre brut; mais la mélasse favorise peu la production de carie.

4) La salive sert à protéger les dents. L'ablation des glandes salivaires chez les rats eut comme résultat d'augmenter la carie dentaire.

5) La pénicilline et l'auroéomycine sont des substances qui s'opposent à la formation de carie, tout comme l'urée et le carbonate dibasique d'ammonium. Les autres antibiotiques et d'autres substances cliniques sur lesquels ces chercheurs ont travaillé ont peu d'effet sur la carie; plusieurs de ces substances sont actuellement utilisées dans les dentifrices.

En résumé, le docteur Shaw déclare: "Il faut réduire notre consommation de sucre, plus spécialement les bonbons. Nous devons nous défier des formes de sucre qui, à cause de leurs propriétés physiques, adhèrent aux dents." En plus de donner ses conclusions, le docteur Shaw a rapporté que ses travaux sont terminés, parce que la Sugar Research Foundation lui a retiré son appui financier.

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Studies in The Reattachment and Regeneration of The Supporting Structures of The Teeth*

V—Primary Regeneration

W. J. LINGHORNE, D.D.S., M.Sc., Toronto**

INTRODUCTION

Some years ago we became convinced that no major advance in the control of periodontal disease could be expected until more was learned about the tissues involved, i.e., those structural arrangements that connect the teeth with the jaws, termed the periodontal structures or the periodontium. The first phase of this broad problem was an investigation of the possibility of regenerating periodontal structure lost through periodontal disease. The first four papers in the series, studies 1, 2, 3, 4, presented this part of our in-

vestigation. It was found that regeneration from experimentally produced epithelized pockets in dogs can occur by two different processes: (1) a reparative process comparable in many ways to the healing of a fractured bone^o and (2) a much slower, apparently spontaneous regeneration⁸. The regenerative processes were described in the living animal and

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by histological section during the healing period. From these observations certain conclusions were advanced. For convenience the first process will be referred to as primary regeneration, and the other as physiological regeneration.

In his editorial comments on this work, Hamilton B. G. Robinson concisely stated the problem still confronting us. "The ability of the periodontium to regenerate appears to be established beyond reasonable doubt. The aim in clinical periodontics should be to find means of increasing the frequency of such regeneration; in the laboratory the mechanisms should be studied in full."

One objective of our work is to develop a rationale from existing and new experimental data for this aim in clinical periodontics. Another objective is to develop such a basis for the task of maintaining the periodontal structures in a state of health. Recurrence of the disease after treatment is still one of the most discouraging problems in periodontal therapy. Our research so far while indicating the potential for regeneration, has but limited usefulness in the development of a rationale for these objectives. More knowledge is required. But what knowledge is needed and how should we go about seeking it? An analogy from another biological science is helpful in illustrating our problem. An experimenter in the 4th century B.C. gave the following instruction to students in embryology. "Take 20 or more eggs and let them be incubated by 2 or more hens. Then each day from the second to that of hatching, remove an egg, break it and examine it." This preoccupation with such a type of experiment and observation of results dominated embryological research until almost the turn of the 20th century. Embryology remained a descriptive science. Two main concepts arose from this science, epigenesis and preformation and a war of words was carried on between the proponents of each concept. The first break through resulted from the work Wilhelm Ronx⁹ 1888 and Hans Driesch⁸ 1891 to be followed by Hans

Spemann¹¹, Ross G. Harrison⁵ and many others. They designed experiments to throw light on casual relationships between the observed events. Spemann's work in which he developed the concept of organizers in particular exemplifies this type of experimental science. Thus, the modern science of developmental biology was inaugurated.

The analogy to our own investigations is obvious. Beside experiments which reveal new observations or facts about the processes being investigated, we may advance our knowledge by experiments designed to show the relationship between these observations in terms of cause and effect. In so doing not only do we learn what facts are relevant, but missing links in the chain become apparent. Through accident or disease many unplanned experiments are continually being carried out in nature. The lack of controlled conditions is a serious disadvantage, nevertheless, to the trained observer, the clinical field is a rich source of observations which supplement findings from planned experiments. In this part of the introduction we have tried to present the underlying viewpoints and procedures in the phase of our investigation being reported in this and other papers soon to follow in this series. Because these papers are written for the practising dentists as well as research workers in this field, some relevant material that is not new is included and possible clinical applications will be briefly mentioned.

A CONCEPT OF THE PERIODONTIUM AND THE SKELETAL SYSTEM

The bone, periodontal membrane and cementum of the periodontium are part of the facial skeleton. It is unlikely that the mechanism of repair differs basically in skeletal tissues in various parts of the body. In which case, a study of the mechanisms of repair of the periodontal structures is a study of the repair of skeletal tissues. In addition to studying the healing of various types of experimental lesions of the periodontium, this more gen-

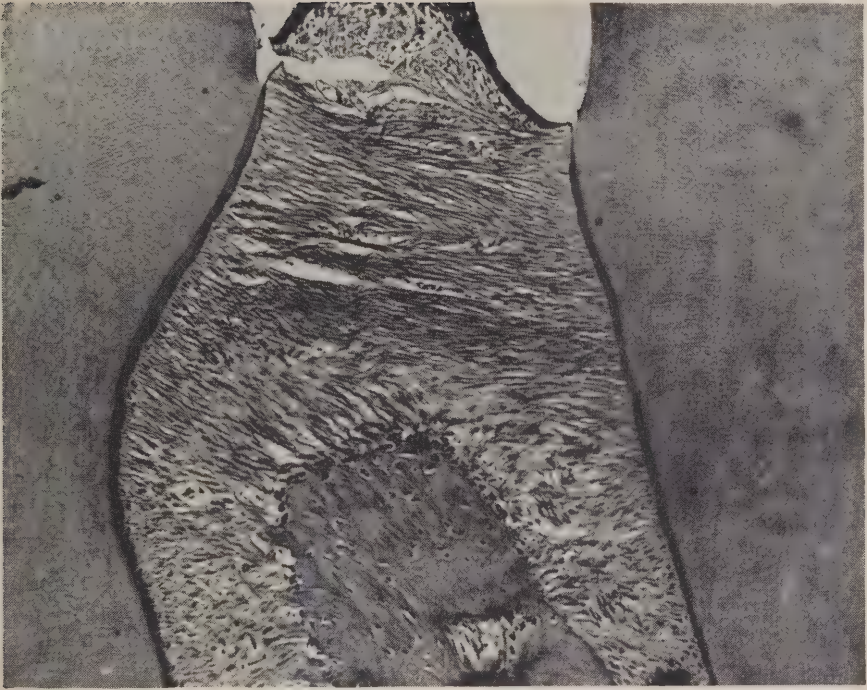


FIG. 1. Sagittal section of molars of normal rat showing alveolar crest between 1st and 2nd molars. Hematoxylin-eosin stain.

eralized approach permitted us to utilize other parts of the skeletal system more suitable for investigating various phases of our problem.

Where do the periodontal structures fit into the scheme of the whole skeletal system? The skeletal system consists of a number of bones fastened together by connective tissue, forming joints.

We are accustomed to consider that the main purpose of this type of arrangement is to permit movement. But Ham⁴ states: "The permitting of movement is not essential for connective structure to be termed a joint." He defines joints as those structural arrangements that exist to connect two or more bones together at the site of their meeting. He further adds: "Some joints are freely moveable, others are almost as solid as the bones they connect," but it is import-

ant to keep in mind that *in all joints there is some degree of movement*. There are various types of joints but with our periodontal problem we are most interested in syndesmoses. Ham defines syndesmoses as joints wherein bones at the site of their meeting, are held together by bands of dense fibrous tissue. He adds further that "it is important to appreciate that in a syndesmoses the bands of connective tissue extend from one bare bony surface to another." Consideration of Fig 1, a field from a section of rat periodontium, from the above viewpoint indicates that the periodontium may properly be termed a joint of the syndesmoses type. Perhaps we might change our perspective; instead of thinking of joints as primarily for movement, let us consider that the various calcified parts of the skeletal system must be formed as separate units which

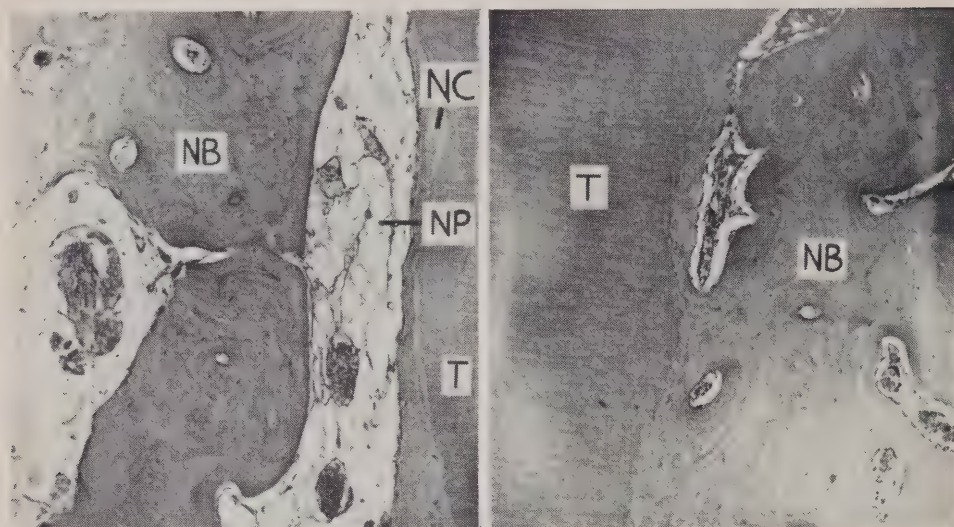


FIG. 2. Section at 104th day showing regenerated periodontium for epithelized pocket in dog. Ankylosis on right limiting movement in neighbouring periodontium on left which remains bone marrow. Hematoxylin-eosin stain. (T—tooth, NC—new cementum, NB—new bone, NP—new periodontal membrane.)

must be fastened together by connective tissue to meet the requirements of skeletal support. We then have no trouble in considering the attachment of the teeth to the jaws as joints, as we know that there are very good reasons for separate formation of the teeth and the jaws as parts of the skeletal support of the masticatory apparatus.

While we have referred to our primary regeneration of the periodontium as similar to fracture healing, there are points of difference between the repair of a joint and the repair of a fractured bone. For this reason we are using the term periodontal joint in discussing the physiology of the supporting structures of the teeth. The periodontal joint consists of the bone of the socket, the periodontal membrane and the cementum. The tooth will not be considered as part of the joint.

This might be a suitable time to point out one of the local features in which the periodontal joint differs from other joints in the body, i.e. the periodontal joint is bounded on one side by epith-

elium. The complication of this feature in periodontal therapy is well known.

REVELANT OBSERVATION FROM OUR EARLIER WORK

In study 2⁷ in this series evidence was presented that new cementum formed in repair may be considered as bone laid down on the tooth. The new periodontal membrane also appears to be formed from the same proliferating cells that become osteoblasts and cementoblasts. The movement permitted by the joint structure seems to play a role in the formation of new periodontal membrane, for when ankylosis of a part of the regenerated joint structure was induced, preventing movement, the periodontal membrane in the immediate vicinity of the ankylosis remains bone marrow, Fig. 2. As all three joint tissues (bone, periodontal membrane and cementum,) are formed from the same proliferating cells, the regenerative process must be osteogenic rather than fibrogenic. In that respect, then, the process is similar to the healing

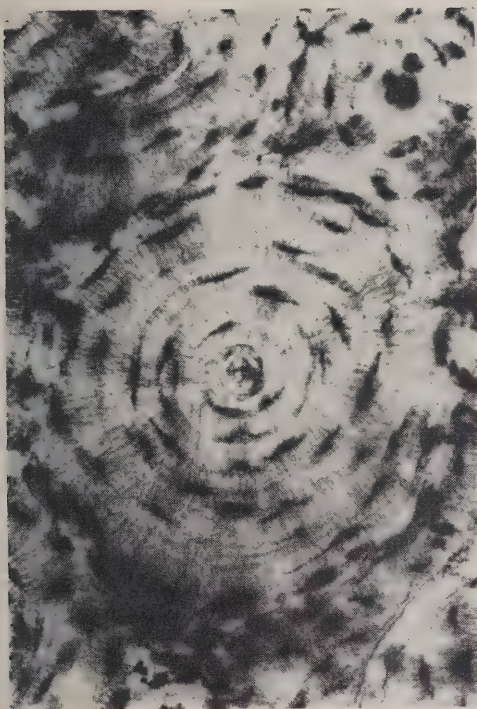


FIG. 3. Cross section through an Haversian system under high magnification. Dried ground section through human bone. (Bone and Bones courtesy of H. Sicher and J. P. Weinmann).

of a fracture. This principle will be discussed in more detail later.

From our experimental studies it was found that there is no difference in the regenerated joint structure formed by the relatively fast primary or the slower physiological regeneration. With the exception of the resorption of the cementum and some of the dentine, regenerated periodontum can not be distinguished histologically from normal undamaged periodontium. In sections cut at various stages *during* the healing period, however, the histological picture is quite different in the two regenerative processes, particularly in the formation of new bone.

TYPES OF BONE OBSERVED IN THE TWO REGENERATIVE PROCESSES

Bone consists of a matrix of collagenous fibrils embedded in a homogenous ground substance the whole being rendered rigid by a deposition of calcium salts. The bone cells lie in cell spaces in this rigid matrix and receive their nutrition through fine canaliculi which communicate with their blood supply. The microscopic appearance of bone is dependent on the size, amount and arrangement of

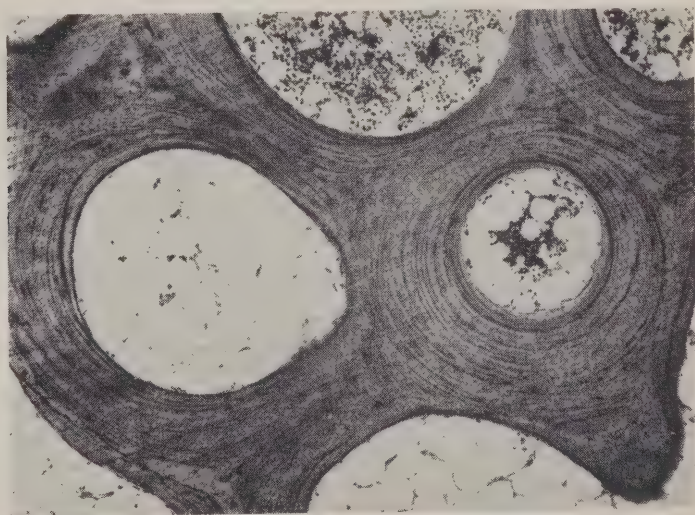


FIG. 4. Human rib, decalcified section of cancellous bone. (Bone and Bones, courtesy of H. Sicher and J. P. Weinmann).

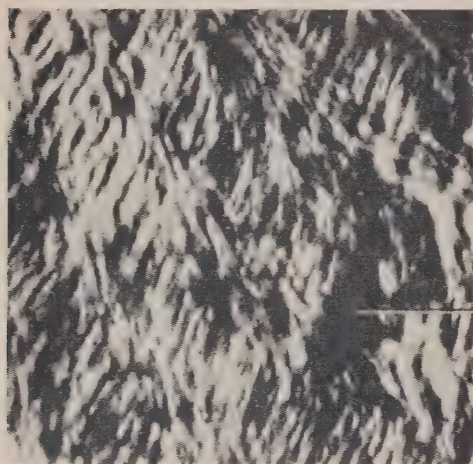


FIG. 5. Surface view of flat lamellae showing the crossing of the fibrils in the matrix. Decalcified section of human mandible. Silver impregnation. (Bone and Bones, courtesy of H. Sicher and J. P. Weinmann).

the collagenous fibrils, the arrangement and character of the bone cells, the cell spaces and the canaliculi. The various types of bone appearing in the two regenerative processes are discussed on this morphological basis.

In both experimental regenerative processes the final form of new bone is the lamellar type. Fig. 3, 4, 5, from "Bone and Bones" illustrate the microscopic structure of this type of bone. Fig. 3 shows a cross-section through an Haversian system, compact bone. We see that in an Haversian system, bone is arranged in a number of concentric lamellae grouped around a narrow axial canal. The regular arrangement of the fibrils is associated with a regular arrangement and orientation of the bone cells and the cell spaces. The cells and cell spaces tend to be elongated in the direction of the fibrils.

In Fig. 4, showing cancellous bone, we see the same regular arrangement of the fibrils and the bone cells characteristic of lamellar bone. In Fig. 5, we see the reason for the lamellar appearance of com-

pact and cancellous bone. The fibrils are arranged in sheets, in each sheet the general direction of the fibrils is the same, but on passing to the next sheet, the general direction of the fibrils changes through an angle of about 45° , sometimes through a complete right angle. Where the change of angle of the fibrils is the greatest, the lamellar appearance is most distinctive.

Fig. 6 shows the type of bone first laid down in the primary regeneration induced in our dogs. This bone is laid down in trabeculae and for that reason is often called cancellous bone. But is it cancellous bone? We have seen that cancellous bone exhibits the characteristic pattern of the fibrils and cells of lamellar bone. But in Fig. 7, a higher magnification of this type of bone, we see that the fibrils of the matrix cross one another in different directions forming what Baker¹ likens to an irregular woven felt work. Notice the difference in shape and lack of orientation of the bone cells and cell spaces to that of the cells in lamellar bone. In contrast to lamellar bone, this bone is characterized by a lack of pattern. There is no standard nomenclature for this type of bone in the literature. It is referred to as immature, primitive, coarse fibrillar, fiber, non-lamellar, or woven bone. Baker¹, the British pathologist, not only gave a good description of this type of bone but also expressed his belief that failure to differentiate between it and cancellous bone is the reason for some of the confusion in bone pathology. In this paper we are using Baker's term for this type, woven bone.

Fig 8 shows still another type of bone. This type is first laid down at the growing tip of the alveolar crest in the slow, physiological regeneration described in Study 3,⁶ of this series. It differs from the other types described in that the collagenous system of the bone matrix is that of the original connective tissue. Baker believes that this type of bone is formed by the metaplasia of existing connective tissue and he terms it metaplastic bone.

FIG. 6. Low power magnification at 28 days of regenerating socket bone in dog; rapidly growing coarse trabeculae of woven bone. Notice differentiation of osteoblasts some distance from bone surface in direction of growth.



FIG. 7. Section at 28 days in healing of experimental gap in fibula of dog. Woven bone being laid down in cell mass.

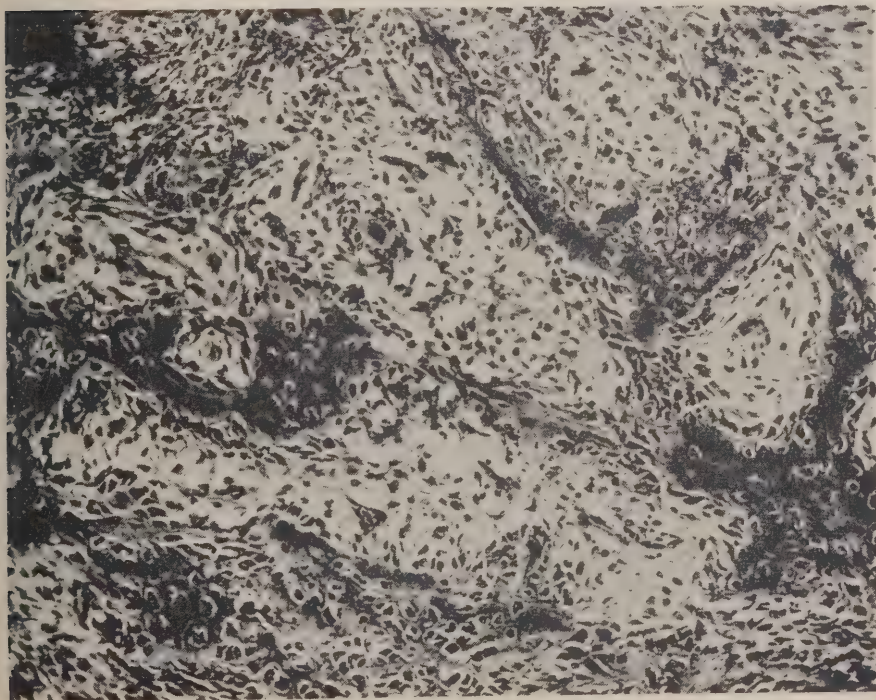




FIG. 8. High power magnification of metaplastic bone at growing tip of alveolar crest in physiological regeneration at 19 months. Hematoxylin-eosin stain.

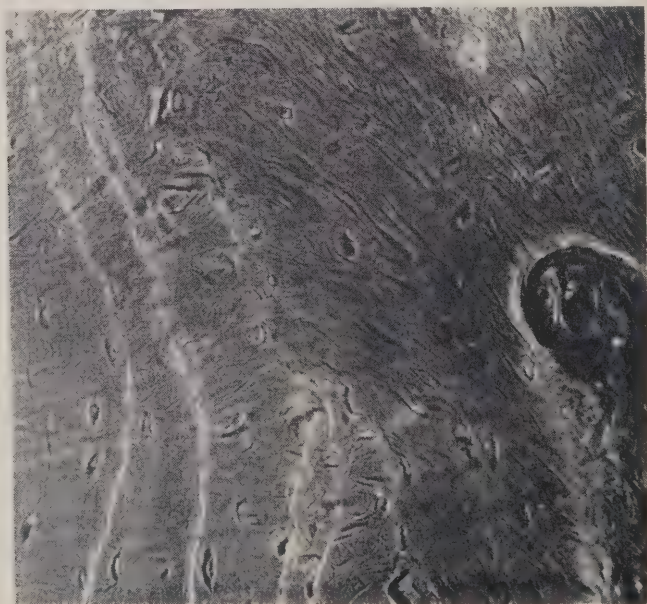
Again there is no standard nomenclature in the literature so we will use Baker's term, metaplastic bone. Fig. 9, is a view of the same section, a fraction of a mm. from the crest. We see that the metaplastic bone, like the woven bone in the primary regeneration, is replaced by mature lamellar bone. So the end result, mature lamellar bone, occurs with either regenerative process. The bone observed in the regenerative processes can be classified as:

- | | |
|-------------------|-----------------|
| Lamellar bone | (a) Compact |
| | (b) Cancellous |
| Non-lamellar bone | (a) Woven |
| | (b) Metaplastic |

RELATIONSHIP BETWEEN THE TYPE OF BONE AND THE BONE FORMING PROCESS IN PRIMARY REGENERATION.

What can we learn about the nature of the two reparative processes from the observations of the different types of bone? It seemed to us that we must learn how and why these different types of bone are formed before we can hope to understand the processes in which they appear. Before advancing our concept of the forma-

FIG. 9. High power field 1 mm. from bone margin of the alveolar crest shown in Fig. 8. Metaplastic bone being replaced by lamellar bone. Mematoxylin-eosin stain.



tion of the woven and lamellar bone appearing in the primary regeneration, it would be helpful to first consider some of the conditions peculiar to bone, imposed by calcification. Let us consider how bone is formed.

We must keep in mind that bone formation consists of two processes: (1) the formation of the bone matrix, osteoid tissue, and (2) the calcification of the matrix. In the formation of the matrix as for the formation of other tissues, there must be proliferation of new cells, then the differentiation of osteoblasts which are believed to form bone matrix (collagenous fibrils and homogenous ground substance.) Using Ham's³ description, the osteoblasts secrete or form around themselves the typical organic intercellular substance which when calcified becomes bone. Osteoblasts have many long protoplasmic processes which Ham likens to the legs of a spider. When the osteoblasts lay down the organic intercellular substance they do so not only around their cell bodies but also around their processes. Thus canaliculi are formed through which the osteoblasts, now osteocytes, are nourished after calcification of the bone matrix. Ham points out that this mechanism from the capillary to the cells by which food and oxygen are brought to the cells after calcification is inefficient. Thus the majority of bone cells, are no more than 1/10 mm away from a capillary. As new layers of bone are deposited on bone, the cells of the deeper layer become farther and farther from their capillaries and die. When cells die the calcified matrix is resorbed. Why the maintenance of calcified matrix depends on living cells is not understood. To replace this dead bone, both the calcium salts and the bone matrix are removed together, and the process of new bone formation, i.e. cellular proliferation and differentiation, formation of osteoid and its calcification, must be initiated again. Thus to maintain a calcified matrix nourished by living cells there must be a continuous formation and resorption of bone.

As stated by Ham³: "Bony structures are not malleable and hence the only way that the shape and size of any bone structure can be changed is by bone being added to and taken away from, its various surfaces." The point we wish to emphasize is that in maintenance, as in the growth and repair of a bone, stimulation for the growth of new bone tissue is required. This bone forming process in maintenance will be referred to as "physiological bone" formation to distinguish it from the bone formation in repair which will be referred to as "pathological bone" formation. The reason for such terminology will be discussed later.

Let us consider how lamellar and woven bone are formed and what we can learn about the primary regenerative process from the differences in their microscopic appearance. Metaplastic bone will be left for a later paper in this series when describing physiological regeneration. Let us consider lamellar bone first. In considering this problem, a study by Weiss¹⁸ should be kept in mind. He demonstrated that if a thin film of fibroblasts grown in tissue culture is subjected to a regional tension, the cells exposed to the tensile force (1) multiply more rapidly and (2) orient themselves in parallel lines in the direction of the strain. Stearns¹² observed that the rate, amount, and direction of fibre formation are influenced by tension. In other words, tension exerted on connective tissue stimulates fibroblast proliferation, fibre formation and determines the direction in which the fibres are laid down. A large amount of work has been done on the effect of mechanical forces on bones. It is reasonably well established that increased stresses and strains on bone stimulate new bone formation. Absence of mechanical stimuli produce a dis-use atrophy. Bones are sensitive to mechanical stress and, their external form and internal structure will change with every alteration in the amount and the direction of their functional forces (Wolff's law). In brief, a bone is continually being adapted to the

burden it has to bear. So in addition to the limitation on bone imposed by calcification, there is also the need for continually adapting to alterations in function and the need for bone to function as a reservoir of calcium salts. We must emphasize again that the maintenance of a bone is a dynamic process continually requiring the new formation of bone tissue. Our interpretation is that in maintenance, stress is the stimulus for the cellular proliferation in osteogenesis and lamellar bone is the type of bone produced by the stress induced osteogenesis. Let us postulate the increase of functional stress on a bone. The exact mechanism of such stimulation remains obscure but it seems probable that the bending movement in the bone directly or indirectly stimulates the proliferation of the cells at the bone surface, resulting in the formation of a layer of osteoid being laid down on the bone surface. We must keep in mind that osteoid tissue contains all the structural elements of bone. Calcification may obscure but does not change the structural arrangement. The calcification of the layer of new osteoid then strengthens the bone in the area where the bending movements are greatest. To produce the structural characteristics of lamellar bone, the bone-forming process must be sufficiently slow that the formation of osteoid and its calcification keeps pace with the proliferation and differentiation of new osteoblasts. The plastic osteoid then will always be laid down as a thin layer on a rigid surface. The importance of the above will be more appreciated when discussing the formation of woven bone, where the cellular proliferation is much more rapid. The lamellar pattern is probably most distinct where the osteoid tissue is subjected to shearing forces. We have seen that as new layers of bone are formed on bone, the cells of deeper layers die and the bone is resorbed. The mechanism postulated is consistent with the many observations of lamellar bone in performing its supportive function. We must keep in mind, how-

ever, that lamellar bone responds to stimuli other than stress stimuli.

It is woven bone that forms the skeleton of the embryo. It is gradually replaced by the lamellar type so that after the first year of postnatal life practically the whole of the skeleton is lamellar bone. Woven bone is also seen in many pathological states. Baker¹ states that any bone formed rapidly under pathological conditions will be of this type. The healing of a fracture, an example of a pathological condition, is useful in presenting our view of the formation of woven bone. One of the striking features in fracture healing is the almost wild proliferation of the osteogenic cells. The cells proliferate so rapidly that by the time differentiation takes place the newly formed osteoblasts may be some distance from the bone surface, Fig. 6. The osteoid tissue is then laid down in a mass of cells rather than on a rigid bone surface as in the formation of lamellar bone. When formed under these conditions the new bone exhibits the characteristic microscopic structure described in woven bone. As it is unaffected by stress, laid down in a mass of cells rather than on a rigid surface, the reason for the lack of pattern in woven bone is obvious.

NATURE OF PRIMARY REGENERATIVE PROCESS

We can now begin to see the pattern of the primary regenerative process. Fig. 6 shows the woven bone first laid down. It is not subjected to masticatory stress on the tooth until the new socket bone has been formed and the fibres of the new periodontal membrane are attached to the tooth by new cementum. The stimuli for the rapid proliferation of cells that forms new tissue around the denuded root and later differentiates to bone, periodontal membrane and cementum, come from the wound (pathological stimuli). For that reason we are using the term pathological formation for the newly formed bone, cementum and periodontal membrane. With the organization of the blood clot the

pathological stimuli subside and, in a sense, healing is completed. The establishment of continuity between the tooth and the newly formed supporting structure now permits forces applied to the tooth to be transmitted through the new periodontal membrane to the newly formed woven bone. Stress stimuli can now enter the picture and stimulate the cellular proliferation and the fibre formation for the adaptation of the new periodontal membrane to function. The new principal fibres are attached to the tooth by a stress-induced formation of more new cementum. Stress also determines the direction in which the new periodontal fibres are laid down. Keeping pace is the formation of new bone, which, being stress induced and laid down on the surface of the woven bone, will be of the lamellar type. As new layers of bone are deposited on the woven bone gradually the cells of the older bone (woven bone) die and the bone is resorbed. Eventually the result will be a functionally adapted joint structure indistinguishable from undisturbed periodontal joint structure except for resorption of the old cementum and some of the dentine described in previous papers. This resorption occurs in the pathological phase of the regenerative process. Following the re-establishment of continuity, the adaptation of the regenerated tissue to function is a process that continues normally throughout life in the maintenance of the joint structures. Therefore this second phase in the regenerative process is accomplished by the maintenance processes. In the regenerative process there is, then, a pathological and physiological phase.

CONCEPT OF REPAIR OF BONE

Using a fractured long bone as an example, the broad outline of the reparative scheme appears to be as follows. The interruption of continuity in a bone by fracture, interrupts the process by which the bone is maintained. The maintenance processes cannot operate until continuity is reestablished. The stimuli for the for-

mation of the new bone tissue required to establish continuity comes from the wound. This new bone is of the woven type Fig. 7. When continuity is re-established by the formation of woven bone between and around the bony fragments at the site of the fracture, the pathological stimuli subside. The establishment of continuity restores the operation of the maintenance processes and the adaptation of the newly formed woven bone to function begins. Eventually the woven bone is replaced by lamellar bone. Thus, we see that the same conditions both structurally and functionally as those existing before the fracture are re-established. The primary regeneration of the periodontal joint is basically similar to the healing of a fracture, in that both processes are osteogenic. The movement permitted by the joint structure is an important factor in the formation of the connective tissue part of the joint, the periodontal membrane.

The above outline is an over simplification but was attempted for the purpose of continuity and clarity. For example in Fig. 10, at the 28th day, new bone is observed being laid down on woven bone. This new bone appears to be lamellar bone but it differs from lamellar bone in that we do not believe it is stress induced. Thus, like the woven bone on which it is deposited, it is not adapted to function. Its structure differs from woven bone as this osteogenic process is much slower than the process producing woven bone. Therefore, this type of bone is laid down as layers on a rigid surface. We believe this bone is similar to that laid down on grafts of both bone and dentine shown in study 2', also the cementum first laid down on the denuded tooth in the pathological phase of regeneration. Another fact not yet considered is that cartilage may appear and be replaced in the pathological phase in the healing of a fracture of a long bone. Then, there is the problem of inducing osteogenesis rather than fibrogenesis. The evidence indicates that regeneration occurs by an osteogenic pro-

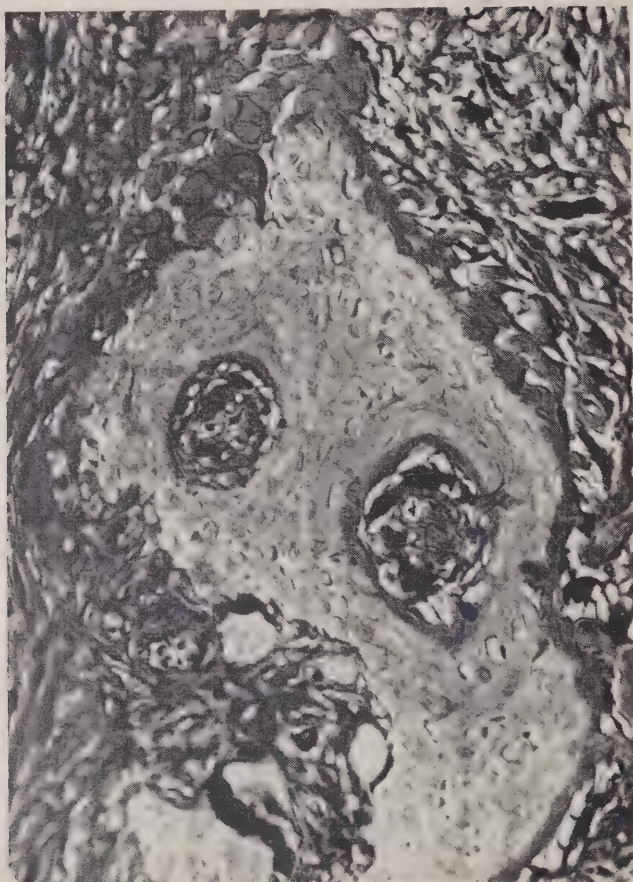


FIG. 10. Section at 25 days. Seam of osteoid at centre laid down on woven bone. Hematoxylin-eosin stain.

cess. But, in most organs of the body following injury, continuity is reestablished by the formation of fibrous tissue, an undesirable method in fracture healing or in regeneration of the periodontium. This is, of course, a basic problem in the field of skeletal tissue. We are reporting our progress in investigating this problem in Study 6, the next paper in this series.

DISCUSSION

We have seen that the problem of re-

generating lost periodontal structure — a problem of much less importance than many facing the healing professions — has forced us to face profound questions in biology which are of very great significance. Answers to such questions as: how is bone tissue formed in repair and in maintenance? What are the requirements for bone formation? How can an osteogenic rather than a fibrogenic process be induced in repair, are required, for the complete solution of our periodontal problem.

CONCLUSIONS

The following conclusions are advanced:

1. Regeneration of the supporting structures of the teeth is an osteogenic process. Both calcified and connective tissue parts of the periodontium are formed through the osteogenic rather than the fibrogenic pathway.

2. Basically the processes operating in the periodontium are those in effect throughout the whole skeletal system.

3. The periodontium may be considered as a joint of the syndesmoses type.

4. In the primary regenerative process there is a pathological and a physiological phase.

5. In the pathological phase, woven bone is formed, in the physiological phase, lamellar bone.

6. Continuity is established in a fracture by the formation of woven bone. Following the establishment of continuity, the bone which was fractured, is again adapted to function and is composed of lamellar bone.

7. There are indications that a third type of bone that has never been adequately described, is formed in the primary regenerative process.

8. Maintenance of the periodontium or of a bone is a dynamic process requiring a continual formation of new bone and bone resorption. Interruption of continuity interferes with this dynamic mechanism. Restoration of continuity must be achieved before the mechanism can function normally again.

ACKNOWLEDGMENTS

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BIBLIOGRAPHY

1. BAKER, S. L.: The General Pathology of Bone: Chapter XVIII of Vol. 3, in A Text-book of X-Ray Diagnosis by British Authors, London H. K. Lewis, 1939.
2. DRIESCH, H.: (Complete larvae from single blastomeres) *Zeitschr. f. wiss. Zool* 53:160 1891.
3. HAM, A. W.: Some Histophysiological Problems peculiar to Calcified Tissues, *J. Bone Joint Surg.* 34 3, 701-728, July 1952.
4. HAM, A. W.: Histology. The System of Articulations, 832-834, Ed. 2, 1953. J. B. Lippincott, Montreal-Philadelphia.
5. HARRISON, G. ROSS: "Observations on the living developing nerve fiber". *Proc. Soc. Exper. Biol. and Med.* 4:140 1906-1907.
6. LINGHORNE, W. J. and O'CONNELL, D. C.: Studies in the Regeneration and Reattachment of Supporting Structures of the Teeth, I Soft Tissue Reattachment, *J. D. Res.* 29:419, 1950.
7. LINGHORNE, W. J. and O'CONNELL, D. C.: Studies in the Regeneration and Reattachment of Supporting Structures of the Teeth, II. Regeneration of Alveolar Process, *J.D. Res.* 30:604, 1951.
8. LINGHORNE, W. J. and O'CONNELL, D. C.: Studies in the Regeneration and Regeneration of the Supporting Structures of the Teeth, III. Regeneration in Epithelized Pockets, *J.D. Res.* 34:164-177, 1955.
9. LINGHORNE, W. J.: Studies in the Reattachment and Regeneration of the Supporting Structures of the Teeth, IV. Regeneration in Epithelized Pockets Following the Organization of Blood Clot, *J.D. Res.* 36:4-12, 1957.
10. RONX, W.: (Killed one cell of two cell stage embryo . . .) (a) "Gesammelte Abhandlungen über Entwicklungsmechanik d. Organismen" Engelmann, Leipzig 2:419 1895.
11. SPEMANN, H.: (Collected works . . .) "Embryonic Development and Induction" Yale Univ. Press New Haven 1938. English version of: "Experimentelle Beiträge zu einer Theorie der Entwicklung" Springer, Berlin 1936.
12. STEARNS, M. L.: Studies on the Development of Connective Tissue in Transparent Chamber in the Rabbit's Ear. *Amer. Journ. Anat.* 66-67, 1940.
13. WEISS, P.: Erzwungung elementarer Strukturverschiedenheiten am in vitro Wachsenden Gewebe. *Arch. Entwicklungsmech.* 116, 1929.

Big Dividends from Research. In dollars and cents, how much does society get back for its investment in research and development? Raymond Ewell of the National Science Foundation recently examined this question . . . Reasonable assumptions led to the estimate that in the United States the return averages from 100 to 200 per cent a year for 25 years. Over the course of 25 years, society gets back \$2,500 to \$5,000 for every \$100 spent on research and development. Some of Ewell's figures are pretty speculative, but even if there is a large error in the estimated return, research and development appears, on a strictly financial basis, to be a first-class investment. Confirmation came from a chemical company and an oil company that had independently estimated their returns at 200 and 160 per cent per year, respectively . . . A broker, apparently assuming we have money to invest, has recently been favouring us with persuasively written descriptions of the future prospects of a number of common stocks. Imagine the prospectus that could be written on the basis of Ewell's calculations if Research and Development Unlimited was listed on the New York Stock Exchange. *Editorial, Science*, 122:581 Sept. 30, 1955.

An Evaluation of High Speed Rotary Cutting of Tooth Tissue*

H. H. PEARSON, D.D.S., Montreal

High speed rotary cutting of the tooth is a means of removing more tissue, with greater precision, with less trauma, in less time.

Our goal in operative procedures is the production of restorations that will re-establish the tooth, the segment or whole denture to healthy function. It has long been our desire to accomplish this in a manner which would produce a minimum of stress to the tooth, to the supporting tissues, to the patient during and after the operation, as well as to the operator during and after the operation.

Let us consider the patient first, for, after all, patients are persons, and the mouth is the gateway to the body. The mouth is our specialized field of medicine, our way of restoring health to the body.

We have always taken into consideration the patient's reactions and behaviour, and the responses of the tooth to the varied applied stresses during operative procedures. We now are alerted by Hans Selye who emphasizes that a General Adaptation Syndrome is composed of many Local Adaptation Syndromes; that the results of purely local stress become part of the general manifestation of stress with its resultant deterioration of the well being of the host.

When our diagnosis and treatment plan calls for the cutting of the tooth to a form that will receive a desired architecture, we apply much stress to the tooth and the patient without taking into consideration the cumulative traumatic implications.

Oral rehabilitation has reached a state

of complete acceptance by the dental profession, the medical profession, and by our patients, because we have been able to avail ourselves of a comprehensive understanding of the biologic and functional values of the various tissues involved, the engineering principles involved in the various mechanical restorations, as well as the modern materials at our disposal.

Endodontic procedures of pulpotomy and pulpectomy allow us more latitude in the preparation and utilization of abnormally positioned teeth as healthy and functional abutments. Our concepts of Periodontics allow us to correct and retain more teeth by chemical, surgical, and mechanical therapies, re-establishing them as healthy, functional components of the natural denture. The values of modern diagnostic procedures, and the application of modern techniques have proven themselves by the many successes each of us has experienced.

We now have reached a period in our progress where the need for refinement of the various procedures is recognized, and we find it necessary to alter our techniques in order to remove vestiges of gross coarseness, tolerated until now because of the limitations of our cutting equipment and instruments.

With the introduction of this new method of preparation of the tooth, there is a simplification of operative mechanics, and a relaxed patient and dentist.

The myriad of desires, hopes, and ambitions of our predecessors that frustrated them due to the limitations of basic knowledge of the sciences, are now awaiting realization on our part. We are now

* Presented before the Mount Royal Dental Society, December 4, 1957.

able to take full advantage of the recent discoveries in the various sciences and arts. Old ideals and beliefs of a pre-scientific period which existed in an atmosphere of dogmatic authoritarianism are giving way to new methods of reaching new ideals.

We are now in the midst of rapid conversion of standards—from old to new. Luxuries become necessities. The old is not good enough. Progress of man calls for a continuous striving for something better. Man's desires are quickly converted to needs. The inventiveness of man is a precursor of his needs.

The introduction of high speed rotary cutting of tooth tissue may appear to be a novelty to some, — a new nostrum that will soon find its resting place with other ill-considered purchases in our private "Gadget Morgue".

After careful examination and clinical application over a period of three years with the intermediate speeds up to 50,000 r.p.m., and over a year with the ultra high speeds of 150,000 r.p.m., I must acknowledge that this new approach is comparable to the first introduction of an X-Ray machine into my practice in 1919. The ability to make cavity and crown preparations with less trauma, fatigue, pain, and with greater precision, can be compared with the increased diagnostic facility provided by my first X-Ray machine.

In discussing the application of the new high speed rotary cutting of tooth tissue, let us tabulate first what our aspirations are:

(a) Our purpose is to prepare the tooth to a desired form with a minimum of trauma to the tooth tissue, the pulp, the investing tissues and the approximating teeth.

(b) It is our purpose to perform these operations with a minimum of discomfort to the patient.

(c) We wish to perform these operations with a minimum of stress to ourselves.

THE PATIENT'S COMFORT

The average patient's concept of dental pain is a composite picture, a montage made up of a multiple of irritants. These are a combination of trauma producing stimuli, such as neurologic, thermal, vibration, pressure, and noise.

To date we have learned how to recognize and control the various thresholds of neurologic pain by the use of general and local anaesthesia, premedication, sedatives, hypnosis, and now the tranquilizers. The patient's concept of dental pain has been altered.

With this new experience of the pain-free operations, our patients as well as ourselves recognize the need for eliminating the other ingredients of uncomfortable procedures.

Pain is a feeling of being hurt. Hurt in any form is a cause for suffering. It is a disturbance of comfort, of well being. It manifests itself in the form of distress, agony, irritability, restlessness and non-endurance. These are all symptoms of stress produced by vibration, pressure, noise, and duration of the operation. Vibration, hand pressure, and noise produce tension, fatigue and friction between patient and dentist. This friction becomes a factor in the patient-dentist relationship which becomes strained. Resentment develops in the patient to being hurt and disturbed. The dentist develops a guilt complex, conscious of the fact that he is inflicting traumatizing factors. The end result is a crutch in this relationship, a psychologic concession that may result in a compromised prognosis.

The history of the rotary cutting of tooth tissue commences with the use of a "Finger Drill". Next comes a "Hand Piece", then the "Foot Engine", and later the "Electric Engine".

The "Finger Drill" was a straight handled steel instrument that had a bur-like cutter on one end, while the other end was tapered to act as a pivot that fitted into a cone-shaped thimble. This thimble was part of a finger ring assembly that fitted on to the index finger. The instru-

ment was held and rotated in the cavity by the movement of the tips of the thumb and index finger. Finger propulsion produced the power for rotary cutting up to 100 r.p.m.

Next came the "Hand Piece", an instrument that worked like an egg beater. It consisted of a winder that rotated a shaft, which in turn rotated two sets of gears that propelled a bur. Hand propulsion supplied the rotary cutting power of about 300 r.p.m.

Many of my contemporaries remember the "Foot Engine", a rotary cutting instrument powered by the foot. By means of a series of pulleys we were able to produce about 700 r.p.m.

When electricity came into popular use and the electric motor was invented, Edmond Kells developed a contraption that became the first electric dental engine, a motor to take the place of the foot pedal, thus electrically propelling the rotary cutting tool and producing about 1,000 r.p.m.

This history covers a period of about 300 years. Dentists must be a peace-loving people, since they remained happy during all this time, allowing only four types of revolutionaries to disturb them: 100 r.p.m., 300 r.p.m., 700 r.p.m., and 1,000 r.p.m.

About ten to twelve years ago, a new apparatus was introduced which produced a method of cutting tooth tissue based on the commercial sand blasting principle. This is a device by which an abrasive is propelled by a gas through a fine nozzle on to the tooth surface with sufficient force to cut it. Because it cut with greater speed it started a new trend in our thinking.

Some time later, an electronic device was introduced that vibrated at supersonic speed a tool which directs a liquid abrasive which cuts the tooth tissue.

The disadvantages of these two principles were soon recognized and their acceptance was limited. However, to their inventors must be given credit for raising the curtain and bringing into a new per-

spective our goal of stress-free procedures.

Since the advent of these two high speed cutting principles, new appliances have been developed and introduced in rapid succession.

All these newer devices are based on the principle of rotary cutting. We may put them into three classes: (1) electric propulsion; (2) water propulsion; (3) air propulsion.

First came a means of increasing the speed from 4,000 r.p.m. progressively up to 50,000 r.p.m. This was accomplished by altering the resistance coils and changing the ratio of the pulley sizes. It was soon discovered that our old style hand pieces wore out very quickly under these accelerated speeds. It was also discovered that increased temperatures were more quickly generated. New wear resisting hand pieces were developed to keep up with the needs,—better steel, with glass bearings and ball bearings in order to resist friction wear. But the bur latch and gears still remained to produce undesirable vibrations. New cooling devices were developed to prevent thermal trauma.

In 1956, there was introduced a device which would produce up to 150,000 r.p.m. with no vibration with sufficient torque, and a built in thermal control. The required hand pressure on the cutting instrument was reduced from over 2 lbs. to less than $\frac{1}{2}$ oz., thus eliminating vibration, heat, and pressure, three stress-causing elements. This hand piece assembly carries the rotary cutting bur or diamond which is propelled electrically through a series of belt driven pulleys. The coolant is water forced through the hand piece by compressed air, either in the form of a spray or jet. This cooling system is electronically controlled, making it automatic.

Two other principles of rotary cutting have recently been presented. Propulsion is developed by means of a water turbine or an air turbine placed either in the head of the hand piece or at the pulley end of

the hand piece shaft. These also have forced water cooling systems.

We now find ourselves accepting the principle of high speed cutting by means of a rotary propelled instrument with a highly accelerated number of rotations per minute.

ADVANTAGES OF INTERMEDIATE AND ULTRA HIGH SPEED ROTARY CUTTING

- (a) As the speed increases a greater amount of tooth tissue may be removed in less time. The removal of metal restorations and the cutting of enamel becomes simple.
- (b) Because smaller diamonds and burs cut with greater speed and more precision at these speeds, all surfaces of posterior teeth may be reached without traumatizing the soft tissues and adjacent teeth,—as frequently occurs when larger stones and discs are used.
- (c) In ultra high speed, vibration has been removed by the elimination of gears and the substitution of rubber or plastic chucks for the metal chucks and latches. Noise has been transferred from the bur head to the pulley end of the handpiece making it more tolerable.
- (d) The required pressure has been reduced from over 2 lbs. to less than $\frac{1}{2}$ oz.
- (e) The heating up of the hand piece and the entrance of debris and coolant around the bur shaft has been eliminated by a forced air system into and through the mechanism.
- (f) Thermal control system is built into the hand piece so that the coolant may be directed exactly at the point of cutting on the tooth and bur.
- (g) Sufficient torque is necessary to support the cutting ability of the bur or diamond, on curved or angular surfaces and on hard substances such as enamel, gold, or amalgam. Without torque, burs and diamonds tend to skid off these surfaces.
- (h) The syndrome of patient's reaction to rotary tooth cutting at the lower

and intermediate speeds up to 50,000 r.p.m. is made up of psychologic and neurologic pain. The use of ultra high speeds, plus coolant, removes the neurologic pain by eliminating the vibration, heat, and pressure, and reducing the operating time, thus altering the threshold of neurologic pain in most patients to a point of tolerance.

DISADVANTAGES OF INTERMEDIATE AND ULTRA HIGH SPEEDS

- (a) They cannot be used safely for the removal of caries, for prophylaxis, for occlusal adjustments, or for polishing and burnishing metallic restorations.
- (b) Visibility is reduced by the spray of the coolant, making the refinement of the preparations such as bevels and line angles difficult.
- (c) Cutting instruments of over 3 mm. in diameter cannot be used with safety, since the centrifugal force at the periphery of the larger instruments will throw off the coolant preventing it from reaching the tooth surface, thus producing thermal shock or destruction of the pulp.
- (d) One's digital dexterity and tactile perception must be retrained and perfected to accommodate a more perfect control of the reduced pressure required.
- (e) Steel burs are worthless at these speeds.
- (f) Carbides wear out faster than hitherto.
- (g) Diamonds break down more rapidly, due to the failure of the bonding medium to retain the diamond abrasives at these speeds.

The ultra high speed rotary cutting equipment is not intended to take the place of the slower speed equipment; it provides an adjunct, an additional range of operation. It has its limitations, though these are most desirable where indicated. It has its dangers and pitfalls. But these may be kept under control by the care-

ful and gradual training in its use after practising first with the intermediate and high speeds, then the ultra speeds, to develop dexterity. It is a precision instrument which will produce most desirable results or gross destruction if not handled with control.

SUMMARY

The intermediate and ultra high speed rotary tooth cutting techniques if properly developed, together with good accessories, will result in improved tooth preparations, with less stress on the patient and dentist and less operative time required.

In our desire constantly to improve dental health it behooves us to examine carefully each new development, evaluate every advantage and disadvantage which

may present itself. An experimental period should be adopted by first operating on extracted teeth at the various speeds in order to develop and acquire the necessary dexterity. It is recommended that one should become thoroughly familiar with the intermediary high speeds before attempting to use the ultra high speeds.

This preliminary period of self-preparation is important because the equipment is different, the cutting instruments behave differently, and the tooth preparations are approached in a different manner.

The choice of equipment can then be based on the personal equation. The efficiency of the operation, using a stress-free technique, is our prime consideration.

500 Birks Building

Effects of Diphenylhydantoin (Dilantin) on Histamine Changes in Gingival Tissue

L. E. FRANCIS, D.D.S. and K. I. MELVILLE, M.D.*

Since the advent of diphenylhydantoin (Dilantin) as a therapeutic agent in the treatment of epilepsy, a variety of side-effects to the drug have been reported. These appear to be either direct toxic or hypersensitivity reactions. Among these, the occurrence of gingival hyperplasia in children and young adults has been a problem in a high percentage of cases. It has however, been extremely difficult to find an experimental procedure for reproducing the condition, and on this account the exact mechanism of its production is still unknown. Many investigators

have attempted to induce gingival changes of this type in experimental animals, but for the most part these have failed. However, King (1952) has reported the development of both gross and microscopic hyperplasia following both prolonged oral administration and intramuscular injection of the drug in ferrets.

In a large number of experiments performed by the authors during the past two years, using various species of ex-

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perimental animals (rats, dogs, guinea pigs, and hamsters) we were unable to induce any gross hyperplasia in any of these species, but after 3 or 4 months of administration to rats, a mild degree of microscopic hyperplasia could be detected. It has also been possible to confirm the production of experimental gingival changes in ferrets, which had been kept on a normal complete Purina Chow diet with added dilantin sodium.¹ This, however, required rather prolonged administration of the drug.

Some examples of the gross and microscopic changes observed in ferrets after periods ranging from 20 to 60 weeks, with

oral doses of 40 to 200 mg. per day of dilantin, are shown in figures 1 to 5.

Figure 1 shows the maxilla of a normal untreated control ferret. The molar and premolar teeth with the normal surrounding gingival tissue can be readily seen. There is no evidence of any overgrowth of the crowns or of the tissue between the teeth.

Figure 2 shows similarly a photograph of the maxilla of a dilantin-fed ferret (40 mg. per day for 60 weeks). In this a definite overgrowth of the gingiva can be seen. The hypertrophied tissue partially obliterates the molar tooth but completely obliterates the premolar, a clear demarcation of the hyperplastic tissue can also be seen.

(1) Courtesy of Parke, Davis & Company, Detroit, Mich.

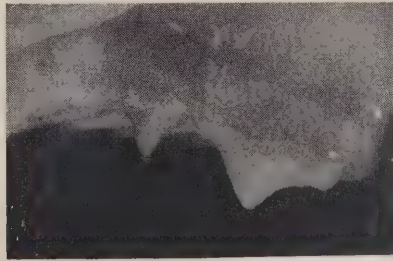


FIGURE 1. Photograph of maxilla of normal untreated ferret, showing normal appearance of molar and premolar teeth, and gingiva.



FIGURE 2. Photograph of maxilla of dilantin-fed ferret, showing molar tooth partially covered and premolar tooth completely covered with hyperplastic gingival tissue. A dose of 40 mg. of dilantin sodium was administered orally daily for 60 weeks previously.

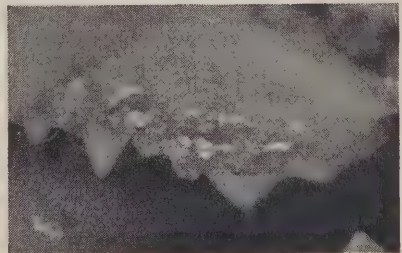


FIGURE 3. Photograph of maxilla of dilantin-fed ferret, showing partial obliteration of the crown of the molar tooth with lobulations of hyperplastic tissue between the molar and premolar, and partial obliteration of the premolar tooth.

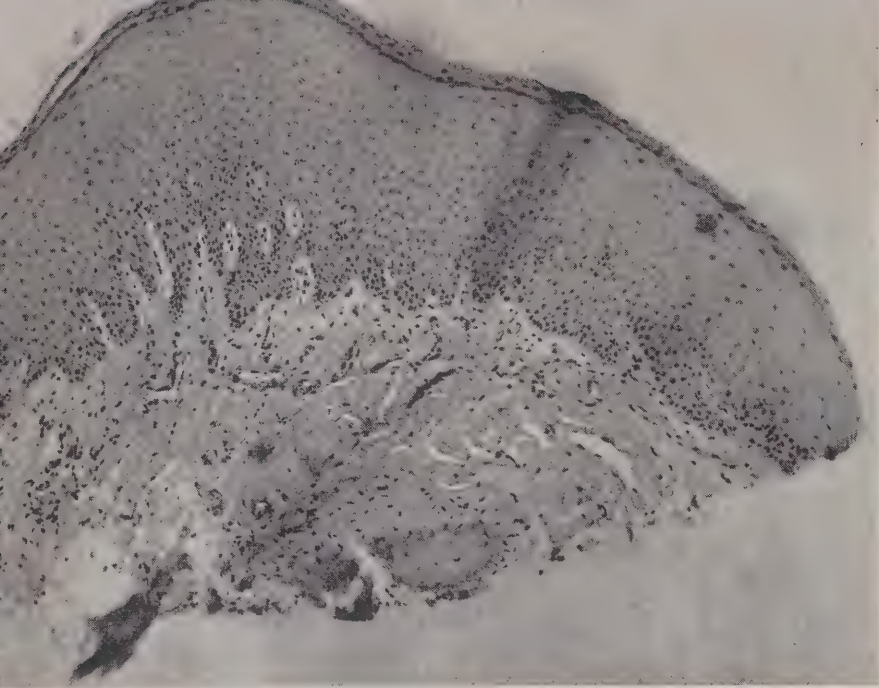


FIGURE 4. Microphotograph of section of normal untreated ferret gingiva (same animal illustrated in Fig. 1), showing normal appearance of epithelium and deeper tissues. Magnification 90x. See text.

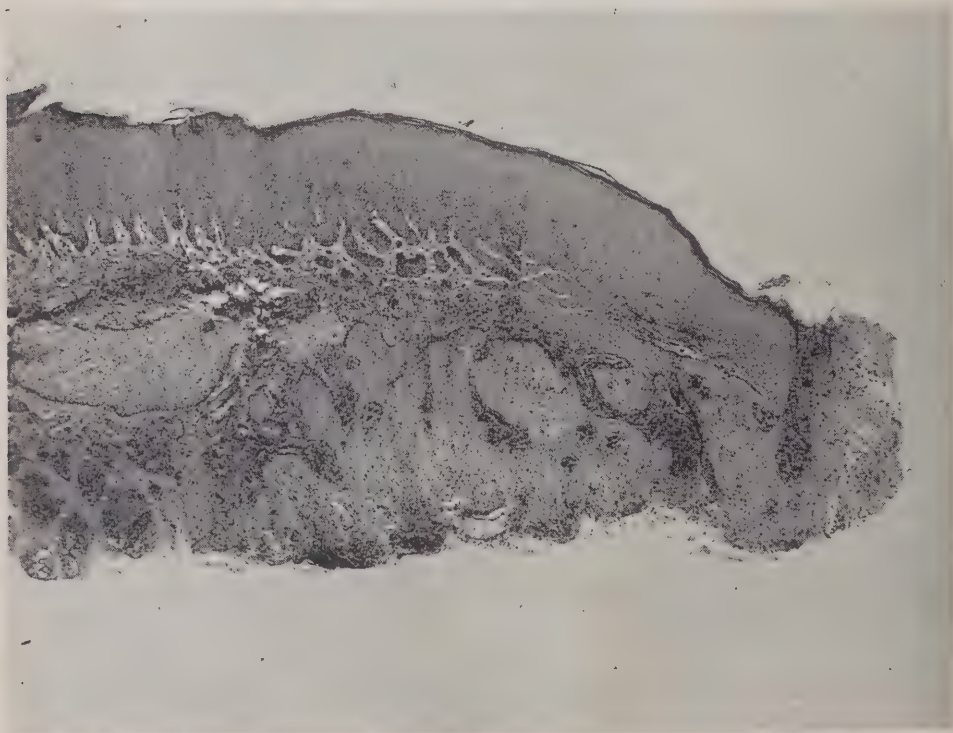


FIGURE 5. Microphotograph of section of hyperplastic gingival tissue of dilantin-fed ferret (same animal illustrated in Fig. 3). Magnification 45x. See text.

Another example of hyperplasia in which lobulations are seen between the premolar and molar teeth is shown in Figure 3. The molar tooth is also partly covered by the tissue overgrowth. In this animal dilantin in a dose of 200 mg. per day was given orally for 20 weeks.

Some illustrations of the histological changes associated with the gross alterations shown above can be seen in Figures 4 and 5.

Figure 4 is a microphotograph (90x magnification) of normal ferret gingiva. The normal stratified squamous epithelium showing the characteristic peg-like downgrowths, but fairly regular demarcations between the epithelium and underlying connective tissue, can be seen.

On the other hand, Figure 5 shows a microphotograph (45x magnification) of gingival tissue obtained from a dilantin-fed ferret (same animal as in Fig. 3). There is complete invasion of the underlying connective tissue by epithelial masses which appear as isolated islands. The superficial layer of epithelium is also thickened, in some instances to as much as 6 or 8 times that of the normal.

It therefore appeared that the ferret afforded a satisfactory animal for the production of experimental gingival hyperplasia. However, the prolonged periods of administration of the drug necessary was a decided disadvantage in attempting any widespread pharmacological investigation of the mechanism of the phenomenon.

Since, as pointed out earlier, some microscopic changes were detected in the gingival tissue of dilantin-treated rats (although no gross hyperplasia developed), and since it had previously been suggested that this phenomenon might be a "sensitivity reaction", it was of interest to investigate possible histamine changes occurring in the gingiva after dilantin administration. Curiously enough there are no previous studies in the literature concerning the 'histamine content' of normal gingiva, and a comparison has therefore been made between changes occurring in

the histamine contents of extracts prepared from normal gingiva of both dogs and ferrets, and of gingiva from dilantin-treated animals of both species, although there was no gross hyperplasia observed in the dogs.

Some of our preliminary observations on dogs are shown in Figures 6 and 7. Approximately 250 mg. of gingival tissue was excised from the dog under pentobarbital anesthesia. The material was weighed, extracted and assayed for histamine activity using the method of Barsoum and Gaddum (1935). The assays were done on strips of guinea pig ileum (approximately 1 inch in length) placed in a 4 ml. bath containing atropinized Tyrode solution, suitably aerated.

In Figure 6, is shown an example of an assay of the gingival extracts obtained from untreated control animals. The contractions obtained from 10 microgram doses (H10) and 2 microgram doses (H2) of a standard histamine solution, are first shown. The preparation gave no response to a histamine dose of 0.3 microgram (HO.3). As can be seen (E19), two injections of doses of 0.3 ml. of normal gingival tissue extracts, induced a greater contraction than that obtained from 2 micrograms of histamine (H2), but less than that obtained from 10 micrograms (H10). It should also be noted that the second response (E19) was slightly less than the first (E19).

Following the exposure of the ileum to these gingival extracts, the figure also shows that for some time there was no response to the 10 microgram doses of histamine (H10). However, with repeated washing and repetition of the standard histamine, there was progressive restoration of the normal responsiveness of the gut to histamine.

It should also be added that in all of the tests in which extracts of normal gingival tissue were studied, the initial histamine response was generally small, developed slowly, and invariably decreased on repeated testing. In some instances, the effect was even completely

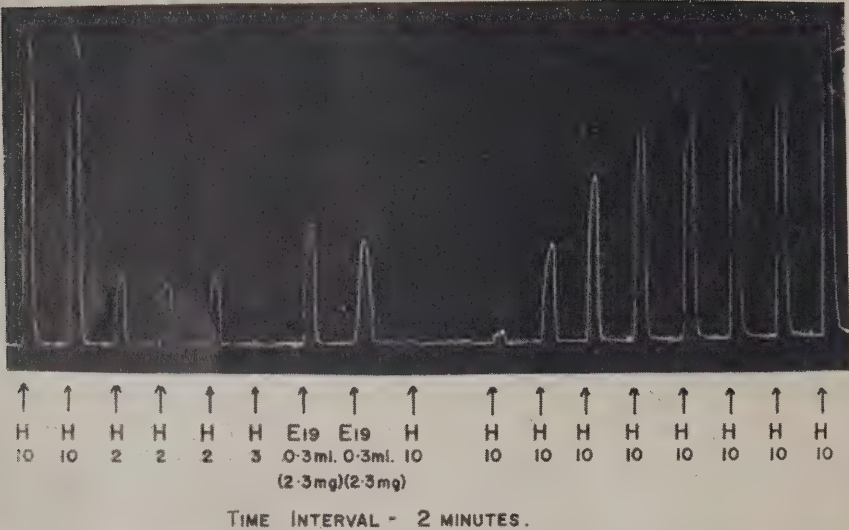


FIGURE 6. Histamine assay on guinea pig ileum, showing effects of normal untreated dog gingival extract (E19), and responses to 10 and 2 microgram of histamine (H10 and H2) before and 10 microgram of histamine (H10) after testing the extract.

abolished on repetition, and concomitantly, the control responses to histamine were similarly diminished or prevented.

In Figure 7 is shown an example of an assay of extracts obtained from the gingiva of dilantin-treated animals. The responsiveness of the gut was again initially standardized using a 1 microgram dose of histamine (H1). This injection was repeated three times and led to identical responses. The gingival extract from the dilantin-fed dog (D22), in a dose of 0.6 ml. led to the striking response shown. Indeed, even a much smaller dose (0.2 ml.) elicited a considerably greater re-

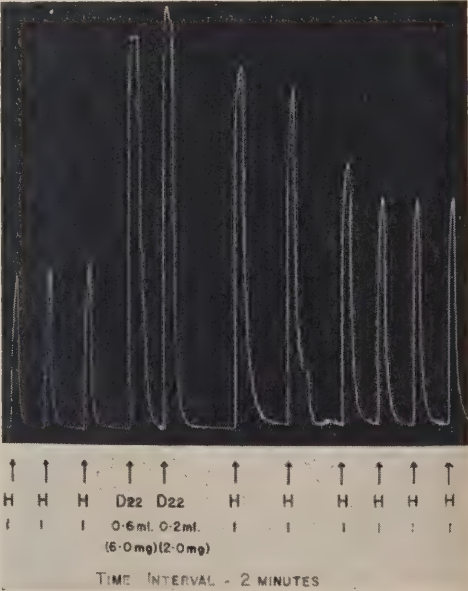


FIGURE 7. Histamine assay on guinea pig ileum, showing effects of dilantin-fed dog gingival extract (D22), and responses to 1 microgram of histamine (H1) before and after testing the extract. A dose of 200 mg. of dilantin sodium was administered orally daily for 22 days previously.

sponse than the standard histamine dose of 1 microgram as previously shown (H1).

It is also shown that following these extracts the responses to the standard histamine (H1) are rather potentiated. Thus, in contrast to the diminished effects to histamine observed after extracts made from normal gingival tissue, the responses were now greatly augmented, and considerable time was required before return of the gut to the normal histamine response (H1).

In the dilantin-treated dogs, as opposed to the normal-control group, (a) all extracts gave strongly positive histamine responses, which were repeatable, and (b) control histamine responses were conversely potentiated by these extracts. Identical changes in histamine responses were demonstrable when extracts of hyperplastic tissue obtained from ferrets were similarly assayed.

It is concluded therefore that normal gingiva contains surprising little extractable histamine, but some unknown smooth muscle depressing or "histamine-inhibiting" substances, while, conversely, after dilantin there appears to be an increased amount of extractable histamine in the gingiva, but little evidence of the

latter substance. While the exact significance of these changes is still unclear, the findings would suggest that gingival changes induced by dilantin might be due fundamentally to some type of altered histamine behaviour in the gums, possibly a "sensitivity reaction". The fact that hyperplasia develops mainly in children and young adults, might indicate that some "trigger mechanism" concerned with local gingival changes (mouth breathing, poor oral hygiene, eruption of teeth) might be also concerned. This problem is being further studied.

REFERENCES

Barsoum, G. S., and Gaddum, J. H., 1935. *J. Physiol.* 85: 1-14. The pharmacological estimation of adenosine and histamine in blood.

King, J. D., 1952. *Brit J. exp. Path.* 33: 491-498.

Experimental production of gingival hyperplasia in ferrets given "Epanutin" (Sodium Diphenyl-hydantoinate).

ACKNOWLEDGMENT

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Chronic Thumb Sucking in Older Children*

BERT J. LEVIN, D.D.S., M.Sc.D., Toronto

There is a new trend which is fast attracting attention as a method of handling the problem of patients who are chronic thumb suckers — that is, for children between the ages of 7 and 13. Seldom, in my practice, are patients under 7 years of age presented for consultation regarding this habit. I therefore am not prepared to discuss thumb sucking as related to children under the age of 7 years. Meanwhile, it must be recognized that thumb suckers of the younger age levels are to be considered in a different light from that which will be presented.

At the outset let it be stated that the following material is not original, nor has it been influenced by any one article; but rather, it has been garnered from a combination of the impressions left by those papers which have been presented in the literature, and from experience during general dental practice and orthodontic practice.

How can we differentiate on the one hand between the child who will stop this sucking habit after only a few words from the physician or dentist, and, on the other hand, from the child who will persist in the habit, despite the use of a number of dental appliances? Thumb suckers seem to divide themselves according to two criteria as seen in dental practice.

1. The time of participation.
2. Their reactions to discussion of the habit.

Those children who suck their thumb only at bedtime, and who will openly discuss

the habit with you are more easily managed. The group which will present the greater difficulty are those who suck during the daytime, and at bedtime. Those children who become flustered, upset, begin to stutter, or even withdraw from a discussion of their habit are also grouped in the more difficult category.

To the first, or more favourable group, it is suggested that all that is necessary is that they be trained to find a new, comfortable position for falling asleep. A pair of pyjamas is converted to a snuggle-bunny to aid in the child's search for this new sleeping position. During the latter part of the discussion, where a remedy is being suggested, the child is asked an additional two or three times whether he wishes to proceed with the idea though it may prove somewhat difficult. Do not lose sight of the fact that this habit has persisted, despite the use of such home remedies as oil of cloves, persuasive grandparents, bribes, threats, boxing gloves, mitts, etc. Repeating the question, "Are you sure that you are willing to give this a good try?" seems to reinforce the child's desire to cooperate. Experience has yet to present a case wherein a patient, who at first was willing to cooperate, later backed down under continued questioning.

It is advised that the snuggle-bunny be left on for one month, and that the child be closely supervised following this period. Should it be noted that the thumb sucking is resorted to again, not two or three times, but just once, this device is placed back in use for two more weeks. To the parents, it is suggested that in their discussions with the child, the snug-

* Read before the Toronto Alumni Chapter of the Alpha Omega Fraternity, February 19, 1957.

gle-bunny be referred to as a means by which their child finds a new sleeping position. In other words, the fact that this is actually a method of breaking a thumb sucking habit is by-passed.

The snuggle-bunny is made in the following manner. A slightly oversized two-piece pair of pyjamas is used, the tops of which must have buttons and not be of the pullover type. If modern washing methods are available only one pair of pyjamas need be prepared. The tops are sewn to the bottoms in such a way that the buttons of the tops are placed at the back. The button holes are made to fit the buttons tightly. The neck portion of the tops are closed up so that it is only an inch or two larger than the neck size. The sleeves are sewn across at the arm pits. The net result resembles a pair of infant's sleepers. The first thought that comes to most parents' minds is that this is a form of strait jacket. By no means is this true. The use of this device permits all normal movements during sleeping while it acts as a reminder to keep the thumb out of the mouth. A child who does not suck his thumb would not experience any difficulty sleeping in a pair of pyjamas so constructed. Success has been experienced with the use of the snuggle-bunny as opposed to tied-on mittens or gloves, for example, because, firstly, it may not be removed by the child; and secondly, it permits sleep in as normal an environment as is possible while a chronic sucking habit is being broken.

Despite the repeated promises to cooperate, and the desire of some children to stop this habit, they will actually tear the pyjamas or go to other great lengths to get at their thumb during their sleep. Such children suck their thumb because an emotional disturbance of some kind is spurring them on. It cannot be explained away as merely a force of habit. These children are automatically re-grouped on this trial and error basis, into the more difficult category. The reasons for the persistence of this habit can be as varied as the experiences of life itself. To help

uncover these reasons, the child should be interviewed by a child psychologist or a child psychiatrist. Psychology and psychiatry are two more sciences which have developed specialized knowledge and techniques for service to children. These people know best how to encourage the children to relate to them their experiences and thus discover what the factors are in the child's everyday life which are maintaining the need for the habit. A program or treatment plan may be set up to see whether this need may be satisfied in another and less harmful way.

It is not within the scope of this presentation to give examples of complete psychological reports such as have been submitted to me. Here, in brief are some of the situations which have been found to exist.

1. Peter — 9½ years of age, was very concerned about his physical stature. He had the height of a five-year-old.
 2. John — 9 years of age, had the mentality of a five-year-old. The parents refused to recognize this, and kept spurring their child on.
 3. Mary — 9½ years of age, whose parents had not shared a bedroom for five years. The father was home for only thirteen meals a week — seven breakfasts and six evening meals — none of them with the children. On Sundays he left home after breakfast and returned, only to go to sleep in the den. Mary had a brother eleven years of age, and a sister four and one-half years of age — all sucked their thumbs.
 4. Frank — 10½ years of age, the son of an athletic father, was being brought up in a tough neighborhood. He was not inclined to sports, and therefore was being neglected by his father. Simultaneously, he found it very difficult to find friends on the street. He had the emotional development of a three-year-old, and was believed to have suffered some permanent personality damage.
- It does not necessarily follow that when these situations are found to exist that the child will always suck his thumb, or that he need always be sent to a psychologist. What it does mean is that these particular children sought solace against their anxieties by thumb sucking. Nine of ten other children may have learned more mature

ways of dealing with these emotional problems.

Now that the underlying cause for the child's participation in the habit has been discovered, a period which varies with each case, should be allowed to elapse. During this period, a family effort is made to relieve the tensions of the child.

If the habit is continuing to some extent, the dentist may now, with the consent of the parents, the child and the psychologist, resort to his favourite restrictive appliance. When the dentist now enters the picture, the likelihood for other, more harmful habits being innovated is greatly diminished. One has not empirically bullozed one's way at the child with a dental appliance, having the teeth only in mind.

Two case histories will illustrate the point.

1. The parents felt that they could threaten their child out of thumb sucking. The mother inadvertently walked into her daughter's bedroom a short time later, to find that her daughter was masturbating. She burst out crying upon seeing her mother, saying that she did not know what she was doing, nor even why, for that matter. This child substituted one habit for another.
2. Shortly after the appliance known as a crib was cemented to the teeth, the patient began to stutter. This speech defect

was discontinued when the crib was removed. Of course, the thumb sucking then recurred. In this case, the patient was emotionally disturbed by the appliance.

Obviously the above treatment was inadequate because it ignored the fundamental reasons for the continuation of the habit. At least the adverse effects resulting from the treatment recommended were noticed in time and a more complete diagnosis could be made. More often the repercussions of improper treatment are not recognized and severe emotional damage results. I feel that it is time that, as a profession, we become cognizant of the harm that is being done with the indiscriminate placement of the restrictive appliances to break the habit of thumb sucking without having due regard for the emotional repercussions.

Though it has been demonstrated statistically in the Burlington study that there is a direct relationship between the incidence of thumb sucking and malocclusion it need not follow that this problem is to be handled by the dental profession alone. It is the duty of our profession to cooperate with child psychologists and psychiatrists and such a referral should be considered as logical a procedure as a recommendation to any other specialist.

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ABSTRACTS

The Status of Oral Surgery

KURT H. THOMA, D.M.D.

Oral surgery as a branch of dentistry has an enviable history of which it can be rightly proud. It has come a long way in the development from a crude beginning to a highly scientific profession, requiring meticulous application of detailed technical knowledge. It is evident that the present day training is needed to meet the responsibility that goes with the newer and broader scope of oral surgery and that an important change in the concept and attitude, which is necessitated by the requirements of hospital routine and hospital practice, has taken place. Today, complicated surgical procedures should not be attempted in the office, and it is recommended that the dentist in a small community, although he may be able to perform certain oral surgery himself, should send more complicated cases to the specialist in another city. Also, the patient who is a poor surgical risk should be given the advantages of hospitalization. General dental practitioners who perform some oral surgery in small communities should familiarize themselves with hos-

pital procedures and hospital operating-room technique to avoid criticism from other members of the staff.

The relation of the oral surgeon to other members of the medical staff improves greatly with confidence. If the hospital authorities realized the type of training that the graduate of dentistry has received in his oral-surgery postgraduate program and understood that the certification by the American Board of Oral Surgery is a true testimony of his training and ability, I am sure that many of the small differences of opinion would disappear.

The well trained oral surgeon should be afforded the same privileges accorded any other surgeon — the criteria should be training and competence, not whether he is an M.D. or a D.M.D., or D.D.S. Most physicians profess to know but little when the mouth is under discussion. The oral expert has much to offer, and the time has come to discard prejudices and misconceptions, and accept the realities of the new order in oral diagnosis and oral

surgery. It is pertinent to stress that the first two years of the undergraduate dental curriculum are spent in pre-clinical sciences, anatomy, physiology, biochemistry, pharmacology, and so forth, as in the medical course. In some institutions, as in the Harvard School of Dental Medicine, the courses are taken concurrently. It is to be regretted that many dentists without the qualifying background use the designation of oral surgeon. This is deceptive. The Massachusetts Dental Society, at its ninety-third annual meeting in May, 1957, passed resolutions prohibiting the designation of oral surgeon on letterheads, prescription blanks or other professional stationery, as well as a listing in the classified section of the telephone directories, unless the dentist meets the American Dental Association requirements for such specialty designation. The ethics-and-discipline section of the Association will, in the future, take corrective measures to discontinue this misleading practice.

The activity of the Joint Commission is a sore point in most oral-surgery circles, because dentistry has no direct representation and no official consultant. It does seem inimical that a representative of the Canadian Medical Association and other allied American medical groups should decide the rules and regulations for members of the American dental profession without representation for dentistry. Ultimately, the American Dental Association must be properly and officially represented on the Joint Commission. This seems not only just but also necessary so that proper and non-discriminatory regulations pertinent to dentistry may be promulgated.

The American Hospital Association, in co-operation with the American Dental Association and with the cosponsorship of the American Medical Association, conducted an institute workshop on hospital dentistry in Washington, D.C., June 17 to 19, 1957. The purpose of this workshop was to discuss mutual problems relating to dentistry and medicine in the hospitals of America today. Although no recom-

mendations of policy were made, it was apparent that there were many problems on both sides, especially regarding oral surgery and it was universally believed that future conferences would be useful to air and solve some of these difficulties to the best advantage of the patient.

In addition a two-year survey of United States dentistry, conducted by the American Council on Education, will begin this year. The survey will be directed by a commission headed by Dr. A. S. Fleming, president of Ohio Wesleyan University and until recently director of the Office of Defense Mobilization. Assistance in specific areas of the survey work will be given by four committees, made up of persons of special competence and judgment in each area.

The survey will be financed by grants of \$250,000 from the Kellogg Foundation, \$120,000 from the American Dental Association, \$25,000 from the Rockefeller Brothers Fund and \$5,000 from the W. and Maud Hill Family Foundation. The survey "can and should be as important to dentistry in all of its aspects as the Flexner Study of 1908 was to medicine."

There is a great future for the specialty of oral surgery because it is progressing in the right direction. The skill of the dentist and his understanding of the function and pathology of the teeth and jaws, combined with the basic medical training that he receives today in his post-graduate course, will help him provide the best service to the communities that he will serve. After all, that is the test of whether a health service is good or bad. As the layman's education expands, the enlightened patient will seek and demand oral-surgery services from a well qualified oral surgeon, and, as things now stand, the only source of qualification and specialty recognition is that offered by the profession of dentistry.

Dentistry as a profession and dentists as rugged individualists will protect this specialty, so nourished.

EDITORIAL

The Relationship of the Profession to the Dental Laboratory Industry

Once again the Canadian dental profession has been faced with the necessity of offering vigorous protest to a committee of a legislature studying a proposed Bill, developed on behalf of a group of unqualified individuals, which would permit these persons to engage in a portion of the practice of dentistry. It was the province of Alberta which recently experienced an attempt by certain dental mechanics to obtain legislative authority to provide dentures directly to the public. This, of course, was not the first attempt to gain recognition. Nor will it be the last. There will always be people who possess a smattering of knowledge anxious to usurp professional services which must be performed only by those possessing suitable academic qualification.

Several European countries have experimented with a fragmentation of dental practice and because of the subsequent degeneration of dental services abandoned the arrangement, sadder but wiser.

Fundamentally the supporting arguments for such retrogressive proposals pertain to economics and scarcity of dentists. It cannot be denied that an improvement in the dentist-patient ratio in Canada is desirable. However the dental profession has been working assiduously, at least since 1942, to obtain additional teach-

ing facilities. The developments at Dalhousie, Toronto, and Manitoba Universities are tangible indications of the results of the profession's effort. Also the profession has attempted on many occasions to present to the custodians of public funds the need for the development of facilities in which to provide courses of instruction in dental hygiene. To date only one limited course is available in Canada because sufficient accommodation has been unavailable in four of our five schools. The hygienist, with her high school graduation and university diploma course behind her, is qualified, under the oversight of the dentist, to provide adequate professional care in certain clinical and educational areas. The academically unprepared dental mechanic, however, is not so equipped.

From an economic standpoint, based on irrefutable governmental statistics, it is a fact that dentists have lower incomes than physicians, lawyers, engineers, architects, and accountants. The cost of operating dental practices is high and this cost has increased most materially, during recent years. It is also factual that dental fees have not increased at a rate comparable to the increase in costs of operation, nor indeed with the consumer price index.

There is another, and perhaps more important aspect of economics which is

probably not as apparent upon cursory examination. That consideration is recruitment. One province in Canada has already experienced the problems of a drastic reduction in the number of candidates for dental schools because of the debates which raged in the legislature proposing to license unqualified individuals. In these days when industry and commerce are competing so prodigiously for personnel and such apparent opportunities exist for young people it would be the unusual father or school guidance officer who would advise a young person to enter a long and arduous course of study, if such uncertainty existed in respect to his future professional vocation. The acceptance of a proposal such as the one offered in Alberta would assuredly affect, most detrimentally, the recruitment of young persons to dentistry.

It is our belief that the vast majority of dental technicians in Canada are not myopic, and they realize that the public is served most advantageously through mutual understanding and co-operation between dental technicians and members of the dental profession. Because of the rapid increase in numbers of persons engaged in dental laboratory pursuits, these technicians became divided into two rather clearly defined groups. Those who were capable of producing a satisfactory product for use in health services by a dentist formed one segment and as a natural sequence for those unable to provide acceptable services for dentists, there was a gravitation to an attempt to serve the public directly. This minority group has attempted to make up in noise what it lacks in ability.

The true dental technician, as opposed to the mechanic, is capable of providing an excellent service to dentists within the limitations of his experience. As the employment of the product of the technician is for a biologic purpose, final responsibility must rest on the dentist for the acceptability of the prosthesis.

While the technician has a definite responsibility to carry out his technical pro-

cedures in accord with the instructions of the dentist, let us not overlook the fact that the dentist has certain obligations to his technician. It is a sad commentary, but nonetheless true, that some dentists knowingly support mechanics who purvey their services directly to the public and thereby augment an income predicated on slightly lower laboratory charges to dentists. Surely by now, no Canadian dentist can be so short-sighted that he does not realize the inevitable results of not supporting a registered or an accredited technician. We say that with tongue in cheek because some dentists are apparently prepared to sacrifice the future professional status of dentistry for some slight temporary financial saving.

While we do not in any way disparage the services of a large commercial laboratory, it is most difficult for a highly competent, registered or accredited technician operating alone, to compete with the laboratories which can relegate certain procedures to personnel of lesser experience, with resulting decreases in costs. Many examples have been given of dentists, especially in smaller centres, by-passing the local technician in favour of a large organization to effect a small saving in cost. To what more likely source of income is such a technician to turn than to the work he knows best—making dentures?

A qualified dental technician performs an essential technical service for a dentist and, as such, is part of the office team. He, therefore, should be treated with courtesy and understanding and his services with appreciation. Many instances however, of unreasonableness, discourtesy, and unappreciativeness have occurred which, to say the least, have strained, considerably, the relationship between the profession and the dental laboratory industry.

Failure to write prescriptions, failure to pay accounts with reasonable promptness, and making unreasonable demands for services, have been other factors which have not enhanced the dentist-tech-

nician relationship. If dentists would mentally reverse places with their technicians on occasion and apply the Golden Rule, perhaps many of our present problems would dissipate themselves.

The Canadian Dental Association recognizes the admirable services of the legitimate dental technicians, which recognition perhaps can best be illustrated by the following resolution adopted at the Winnipeg meeting last June:

"Whereas the vocation of dental technician was initiated by the dental profession to fill a need, and

Whereas the product of the dental technician is complementary to the practice of dentistry, and

Whereas the public is served advantageously through mutual understanding and co-operation between dental technicians and members of the dental profession, and

Whereas the practice of dentistry depends to a considerable extent upon a mutually satisfactory state of affairs

among dental technicians as a group, therefore be it

Resolved that the Canadian Dental Association support efforts by or on behalf of dental technicians which have as their goal an improved ethical relationship between dentists and dental technicians, and further

That the Canadian Dental Association lend support to legislative efforts by dental technicians when such efforts are directed toward ethical and legitimate objectives, and further

That this Association oppose all effort of a legislative nature designed to permit the actual practice of prosthetic dentistry by other than fully trained and qualified personnel, and further

That this Association support those measures designed to give stability to the vocation of dental technician, and furthermore

That the Canadian Dental Association hereby officially do recognize the valued contribution of dental technicians toward the betterment of dental health, through their services to the dentist, for the Canadian public."

BOOK REVIEWS

Orthodontics: Principles and Prevention.

By J. A. Salzmann, D.D.S., F.A.P.H.A. Published by: J. B. Lippincott Company, 381 pages. Price \$13.

Orthodontics: Practice and Technics.

By A. Salzmann, D.D.S., F.A.P.H.A. Published by: J. P. Lippincott Company, 497 pages. Price \$20.

For many years one of the standard textbooks on orthodontics has been *Principles of Orthodontics* by J. A. Salzmann, 1943. As a reference book for students and a guide for practitioners it had few equals.

It has now been succeeded by two volumes dealing separately with principles basic to orthodontics and techniques and appliances. In this way, some of the newer knowledge of growth and development, and various recently developed procedures in mechanotherapy, have been included, without

having to deal with an overwhelmingly massive textbook.

ORTHODONTICS: PRINCIPLES AND PREVENTION has part of the material included in its predecessor, but much of the subject matter has been rearranged for better continuity and has been modernized. The newer concept of the Stomatognathic System has been introduced and this section includes an expanded and very useful description of the temperomandibular joint, and aetiology and treatment of disorders of that kind. A feature that will be greatly appreciated by both undergraduate and graduate students is the Appendix, defining anthropometric and cephalometric landmarks, flares and angles.

ORTHODONTICS: PRACTICE AND TECHNICS includes an important chapter on facial growth in relation to the dentition, in which comparative studies of sequences of facial growth are developed

in relation to occlusion and changes with age. Of great interest will be the chapter on Cephalometrics and Anthropometry, in which the latter subject is discussed first, leading to the important subject of cephalometrics. The methods of Margolis, Downs, Wylie, Bjork and others are given in working detail, and this section is a very useful compendium of our present approach to the subject.

Treatment methods advocated by Tweed and Johnson have been amplified from the previous edition, including Edgewise treatment procedures proposed by Bull and the Pacific Northwest Group. The chapter on removable appliances includes details on bite plates, the monobloc and others.

A feature of these texts, as with previous editions, is the excellent list of references at the end of each chapter, an invaluable aid to the student. All in all, these volumes will prove to be useful to dentists desiring a reference text on basic principles of orthodontics and will be particularly appreciated by those whose interest in orthodontics is beyond the undergraduate level.

Albert J. Colle

Accepted Dental Remedies — 23rd Edition.

Prepared by: American Dental Association. Published by: American Dental Association. Pages: 228. Price: \$3.00.

ACCEPTED DENTAL REMEDIES 1958 represents a new look at the drugs used in the present day practice of dentistry and the problems which face the dentist. The material in this edition not only has been brought up to date but it has been re-

organized in order to make the book easier for the busy practitioner to use. A greatly expanded table of contents provides an outline of the important sections of the entire book.

Since it has been increasingly clear that the dentist must be aware of the total health status of his patients, a new chapter has been added to ACCEPTED DENTAL REMEDIES. This chapter provides a brief outline of the significance to the dentist of some of the drugs which physicians frequently administer to ambulatory patients who may then come to the dentist's office for concurrent dental care. The chapter on emergencies has been expanded to emphasize the desirability of anticipating and preventing the development of emergency situations. Here again emphasis is placed upon the desirability of recognizing the health status of the patient. These revisions reflect the increasing recognition of the important contributions which dentistry makes to total health care.

As in earlier editions, ACCEPTED DENTAL REMEDIES 1958 includes information concerning drugs of recognized value in dentistry, drugs of uncertain status more recently proposed for use by the dentist, and some drugs once employed extensively but now generally regarded as obsolete. Only brands of drugs which the Council has classified in Group A are included in the book.

ACCEPTED DENTAL REMEDIES 1958 contains 228 pages, including the provisions for acceptance of products, a general index, a distributor's index, an index of current reports from the Council and an index of more recent reports on products not listed in ACCEPTED DENTAL REMEDIES, including those classified in Groups B, C and D.

THE LIBRARY

Additions

AMERICAN DENTAL ASSOCIATION. COUNCIL ON DENTAL THERAPEUTICS: Accepted dental remedies. 23rd ed. 1958. 214 p.

DAVIDSON, H. A.: Guide to medical writing; a practical manual for physicians, dentists, nurses, pharmacists. 1957. 338 p. illus.

FOLDES, F. F.: Muscle relaxants in anesthesiology. 1957. 210 p. illus.

MARMASSE, A.: Dentisterie operatoire.

Tome II. Dentisterie restauratrice. 1958. 556 p. illus.

TURNER, C. E., SELLERY, M., & SMITH, S. L.: School health education. 3rd ed. 1957. 466 p. illus.

WALSH, J. P.: A manual of stomatology. 1957. 130 p. illus.

THE YEARBOOK OF DENTISTRY 1956-57: Chicago, Year Book Publishers, 1957. 480 p. illus.

THE ASSOCIATION

Canadian Dental Association Retirement Savings Plan

As all members have been advised, the Association has inaugurated a Retirement Savings Plan under which participants' applications are registered with the Department of National Revenue, to qualify contributions as allowable deductions from earned income when computing Income Tax payable.

Many members have taken advantage of this plan to secure a reduction in their Income Tax liability for 1957, and it is hoped that many more will participate in the future. It is possible that some members have deferred action because of some misunderstanding, or because there were some points on which they were not clear. Reference to the explanatory Booklet will answer most questions that arise, but it will probably be of assistance to clarify here some of the points which have most frequently been raised.

(1) Withdrawal of contributions

There is no intention to impose any restrictions on withdrawal of contributions from the C.D.A.R.S.P., except those which are necessary to comply with Government Regulations on the point. The Department of National Revenue say that they would not give approval to any Plan, Group or Individual, which gave the right of withdrawal of benefits other than as an annuity. At the same time, provision has been made for taxation of withdrawals, and it is not anticipated that the Department would forbid such withdrawals. As far as the C.D.A.R.S.P. is concerned, as long as the Department did not object, a participant could withdraw at any time, without any penalty other than that imposed by Government Regulations.

(2) No commitment to continue

Participation in the Plan does not involve an obligation to make contributions every year. You may miss any year you wish to, and resume payments at any time. However, in any year in which you wish to contribute, your payments for that year must not be less than \$200.

(3) Purchase of Annuity

There is no minimum number of years for which you must contribute, and no pre-selected age at which the annuity benefits must commence. You decide later on these matters, except that the amount standing to your credit must be used to purchase an annuity at some time before your 71st birthday.

You can select the source from which the annuity is purchased, and part or all of the amount standing to your credit can be used to purchase a Government annuity. You will be given advice on this, but the final decision rests with you.

(4) Expense

There appears to be no question that individual Registered Retirement Savings Plans will involve a considerably higher deduction from your account for expenses. Under the C.D.A.R.S.P., the only item which will be charged against the Fund will be the one-eighth of one per cent of the market value of the Fund at each Quarterly Valuation Date. No other deductions are made from your contributions or the interest they earn.

It is felt that a greater understanding of these points will decide many more members to avail themselves of this means of making tax deductible payments for future retirement benefits. It is now too late for those who have not already submitted applications to secure the benefit in respect of 1957, but if you have not already done so, we hope and recommend that you submit your application and commence payments now for 1958. If you have mislaid your application form, another may be obtained by applying to the C.D.A. Retirement Savings Plan, 2249 Yonge Street, Toronto 7, Ontario.

Survey of Dental Practice for 1958

The C.D.A. expects to conduct a survey of dental practice for the current year (1958). Questionnaires will be circulated on a confidential basis to the entire membership in 1959. Certain information is of the utmost importance in planning future dental services.

Requests have been made that advance notice of the survey be published so that members may have opportunity to prepare certain data. The questions relating to number of patients during the year and the number of patient sittings during the year fall into this category.

In order not to disturb comparative analyses, only minor changes in the questionnaire circulated for the survey of the year 1953 are contemplated.

A.D.A. Centennial

The centennial meeting of the American Dental Association will be held in New York City September 14 through 18, 1959, rather than September 21 to 24 as originally planned, it is announced by Dr. Harold Hillenbrand, A.D.A. secretary.

The meeting dates were moved one week earlier because of the availability of additional accommodations, Dr. Hillenbrand said. The meeting also has been extended from four to five days in length to permit the presentation of additional scientific reports and other functions, Dr. Hillenbrand pointed out.

Meeting simultaneously with the A.D.A. will be the Federation Dentaire Internationale with delegates attending from about 75 nations.

Attendance at the meeting is expected to range between 20,000 and 25,000 as dentists from all parts of the world join with U.S. dentists in the observance of the 100th anniversary of the founding of the American Dental Association at Niagara Falls, N.Y., in 1859.

The scientific session will be held at the New York Coliseum and will feature panels, symposia, demonstrations and essays by leading dental practitioners, research workers and educators from the United States and many other nations.

Official headquarters hotels will be the Waldorf Astoria, the Statler and the Biltmore. Accommodations also will be available at most of the other leading hotels of New York City. Headquarters for the Federation Dentaire Internationale will be at the Hotel Manhattan.

A special housing bureau for the centennial meeting will be opened in the spring of 1958 to obtain hotel reservations for those planning to attend the meeting.

Information regarding the centennial meeting may be obtained by writing the Secretary, American Dental Association, 222 East Superior Street, Chicago 11, Illinois, U.S.A.

Sugar Research Highlighted

TIME magazine recently summarized some of the findings of James H. Shaw, Ph.D., assistant professor of biological chemistry at Harvard School of Dental Medicine. Dr. Shaw's paper was reported in the December 1957 issue of the *Journal of the American Dental Association*.

The aim of Dr. Shaw's research was to find out how certain sugars promote dental caries, then to find a way to forestall it. The Sugar Research Foundation Inc., set up by the sugar industry, invested \$57,000 in the ten year project.

Here are some of the findings: By tube feeding of rats, it was demonstrated that the absence of food in the mouth completely prevented tooth decay.

When diets were used that were entirely free of carbohydrate or contained small amounts of either sucrose or starch, no carious lesions developed. As the amount of sucrose or starch was increased, however, there were progressive increases in the incidence of tooth decay.

The route of ingestion was found to be important. Sucrose introduced directly into the stomach tube caused no carious lesions. When sucrose was consumed in solution, a low incidence of decay was recorded, but when sugar in granular form was consumed, the incidence of caries was much higher.

Studies with purified diets showed the monosaccharides and the disaccharides to cause the greatest degree of decay. Starches and dextrins were less cariogenic. Diets of natural foodstuffs with high cereal grain concentration and low dextrose or sucrose content produced high rate of initiation and progression of cari-

ous lesions. Increases in the sugar content of these diets caused further increases in decay incidence. Replacing sucrose with raw sugar made no change in the incidence of dental caries but blackstrap molasses caused a marked reduction in caries.

These observations do not mean that carbohydrates should be eliminated from the diet. Strong genetic factors determine the range in which caries susceptibility lies, when a given oral environment is arranged. Nutritional influences during tooth development can lead to highly caries-resistant teeth even though the teeth may be exposed posteruptively to the same strongly caries-producing environment.

Penicillin and chlortetracycline are effective anti-decay agents, as are urea and dibasic ammonium carbonate. Other antibiotics and chemicals tested — some commonly used in dentifrices — do little or no good.

After ten and one-half years, the Sugar Research Foundation has withdrawn its financial support of Dr. Shaw's research.

Over \$9 Million for Dentifrices

Value of factory shipments of toilet preparations reached a record of \$53,819,000 in 1956, slightly more than 14% above the preceding year's \$47,167,000 and about double 1949's \$27,102,000. Value of dentifrices shipped was \$9,027,000 vs. \$8,024,000 in 1955.

Dental Bills in Health Plan—Liberals Say

The establishment of a health insurance program covering medical, surgical and dental bills will continue to be an objective of the Liberal party.

This was decided by the delegates to the Liberal leadership convention who adopted a seven-point social security policy. In 1919, the Liberal party, at the convention which chose Mackenzie King as leader, came out in favor of health insurance for the first time.

The convention recommended "health insurance provision against major medical, dental and surgical expenses. . .".

Since this is not really new, the significance of the news story is the headlining of "dental bills".

COMMITTEES AND COUNCILS

Dental Public Health

The Committee on Dental Public Health has under consideration the advisability of establishing a National Dental Health Day, or Week in which all ten provincial dental associations might participate. It is proposed to discuss the matter with the Dental Public Health Committee of each provincial dental association and

obtain an expression of opinion, and as thorough a knowledge as possible of what would be involved in relation to each province.

At the C.D.A. Convention at Winnipeg in June of last year, and immediately following the election of our Committee an unofficial, informal meeting was held for

the purpose of exploring this subject. Four members of the Committee were present, as also were four provincial chiefs of Dental Health Divisions, a chairman of the Public Health Committee of one provincial dental association, one provincial Health Educator, and a representative of Information Services Division of the Department of National Health and Welfare.

An exploratory discussion of the advantages and disadvantages of a National Dental Health Day, or Week were discussed at some length. The chief topics dealt with were:

- (1) Integrating the planning of Dental Health Days with the functioning of the agencies which produce the necessary health information materials.

- (2) Developing an effective working relationship among the Dental Public Health Committee of the C.D.A., similar Committees of provincial dental associations, provincial Directorates of Dental Health, provincial and federal divisions of Health Information and Health Education, and such voluntary agencies as may take an active interest in Dental Health.

No attempt was made to reach any final decision at this meeting. The consensus appeared to be that for this year each province should operate its own Dental Health Day, or Week, and that careful thought should be given to organizing a National Dental Health Day for 1959.

H. K. Brown,
Chairman.

Hospital Dental Services

The principle aims of this committee have been to formulate professional standards for hospital dental services and to co-operate with the Council on Dental Education in the promotion of educational standards for dental internships. These standards are now established (revised 1957) and several hospitals have been approved. Canadian hospitals are now accredited by a Canadian commission which seems to ignore the fact that dental services in hospitals are well established and rendering an important health service to the people of Canada. No commission or any other body can exclude oral health from systemic health; hospitals were built by the people for the people and any health program must therefore comprise a dental health service.

Therefore this committee has adopted the principle that no matter how highly a hospital is accredited by the medical

commission, unless it has approval of the Canadian Dental Association for its dental service, it will not be recognized for undergraduate or post graduate training anywhere in the dental profession. This committee over the past few years has studied and published the following literature, Basic Standards for Hospital Dental Services, Standards for Hospital Dental Internships, Lectures to Nurses in Training, Physical Set-Up for Clinics and Equipment. Members of our profession have given much time and knowledge to the treatment of hospital patients. We are not doing all this to be subjugated by antiquated laws to the position of a second rate profession. We are an autonomous profession seeking and willing to contribute of our knowledge and skill in co-operation with the medical profession to the betterment of mankind. This is, with your approval, the aim of your committee.

D. M. Tanner, Chairman

ECONOMIC SECURITY

Some Implications of the Fluoridation Decision

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist

(PART B)

The Supreme Court rejected fluoridation of the water supply of Metropolitan Toronto by municipal ordinance on the ground that it constituted involuntary medication, although the benefits of such medication were not called into question by the Court.* It is to the question of principle which thus appears to have been enunciated, that attention is turned in this second article on the recent decision.

Prior to this decision, it had appeared that preventive medication and nutrition were established practices where the numbers requiring attention were large, were distributed over a wide area, and the question of harmful side-effects did not arise. The addition of iodine to salt, for example, as a preventative of simple goitre has been carried out on a continental basis for many years. Indeed it is unlawful to sell table salt which does not contain iodine. It may be added, parenthetically, for the benefit of those who object to the use of fluorides because the element is a poison, that not only is iodine itself a violent poison, but that the very salt itself — recognized for centuries as an essential to life — is composed of two exceedingly violent poisons: sodium and chlorine.

Since the war, the artificial enrichment of bread flour with vitamin compounds

— although permissive as regards legislation — has become so widespread that it would be difficult for any individual so minded not to eat bread made of flour so enriched. Addition of vitamins also is made to milk, margarine, apple juice, and other foods in general use.

These practices all have developed because of recognition by competent authorities that the measures were necessary to the preservation of the health of large numbers. The evidence concerning the incidence and seriousness of dental caries appears to place this malady at least on a par with simple goitre. Beyond this is the consideration that as population pressures increase with their concomitant of urban diseases and disabilities, and as agricultural soils are progressively depleted of their nutritive elements, the need for mass preventive medication and nutrition will increase.

It is obvious that as the problems requiring special attention increase in number, the ability of the average individual to cope with them on an individual basis will decline in proportion. If the present decision is to be regarded as precluding preventive medication without individual consent, it appears that it must impair our capacity to deal with the new problems which a more densely populated and urbanized society will have to face.

A further and more widespread danger arises out of the foregoing: The danger that we might build up to a health crisis, until in the rush to break the log-jam, drastic legislation will be enacted. Such

* EDITORIAL NOTE

Although Mr. Justice Cartwright specifically referred to medication and medication was alluded to, although not by name, in Mr. Justice Rand's majority decision, the pertinent issue was whether or not the Council of Metropolitan Toronto had the authority under existing legislation to fluoridate its water supply. It was the majority view of the Supreme Court that such permissive legislation did not exist.

legislation might well go too far in the opposite direction and deprive the people of any voice in affairs over a wide range. It is difficult to envisage individuals in Nazi Germany or Communist Russia successfully defying a decree relating to a matter which might impair the efficiency of the people or involve the state in additional expense for curative medical services, any more than we can envisage defiance of political decrees. In Japan, public health is—or at least was in pre-war days—enforced to the extent of police inspection of private homes to ensure freedom from health hazards. These merely exemplify the fact that when any situation reaches a critical enough point the coercive power of the state will be invoked even in the most personal matters. Our problem is to ensure that by for-

ward looking professional leadership backed by intelligent public support, circumstances admitting the intervention of the state do not arise.

It may not be too much to say that the democratic process is on trial. If a substantial majority cannot consider the carefully adduced evidence of experts on a matter, such as fluoridation, which is of the widest importance, we may well be headed for the administrative state with a body of administrative law beyond the reach of the electorate or review by the ordinary courts of justice.

The many years of work of the Canadian Dental Association on this subject thus are justified by the importance not only of the immediate problem, but also by the wider aspects which permeate many phases of our national life.

THE CORPS

New Appointments to Corps

The appointment of Dr. Harry Kenneth Meisner, and Dr. Daniel Robert Girard to the Royal Canadian Dental Corps, has been announced.

Captain Meisner is a graduate of Dalhousie University and practised in Bridgewater, Nova Scotia. He has been posted to H.M.C.S. "Cornwallis", Cornwallis, N.S.

Captain Girard is a graduate of the University of Montreal and practised in Granby, Quebec. He was a member of No. 53 Dental Unit (Militia) from August, 1955, until his present appointment. Capt. Girard is at R.C.A.F. Station, Trenton, Ontario.

Lt. Col. Kearney Promoted

Army Headquarters has announced the promotion of Lieutenant Colonel B. P. Kearney, M.B.E., C.D., to the rank of Colonel, effective February 1, 1958.

Colonel Kearney was born in Galt, Ontario, in 1915. He graduated from the Faculty of Dentistry, University of Toronto, in 1936. Commissioned as a Lieutenant in the Canadian Dental Corps in June, 1940, he

served in the United Kingdom and North-west Europe from August, 1942, to August, 1945, and was made a Member of the British Empire for his services during the Second World War. Since his appointment to the Canadian Army (Regular) in 1946, Colonel Kearney has held many appointments in the Corps, among which was the command of No. 25 Canadian Field Dental Unit in Korea from May, 1953, to May, 1954. He is Commandant of the newly-constructed Corps School at Camp Borden, Ontario.

Mrs. Kearney and their three children reside in married quarters at Camp Borden.

Captain Jorgenson Returns

Captain H. G. Jorgenson has returned to Canada after a tour of duty with 1 Air Division at Metz, France. He is now employed in Western Command, at Edmonton, Alberta.

R.C.D.C. School, Camp Borden

The date of the official opening of the R.C.D.C. School at Camp Borden has been set tentatively as June 14, 1958.

THE PROVINCES

ALBERTA

Alberta Announces Dean-Elect

The President of the University of Alberta has appointed Dr. Hector R. MacLean to the position of Dean-elect of the Faculty of Dentistry. Dean-elect MacLean will assume the deanship September 1, 1958. Dr. MacLean will succeed Dean W. Scott Hamilton who will retire following the close of this Academic year.

Dr. Hector R. MacLean was born in Cornwall, Ontario and was graduated from the Faculty of Dentistry, University of Alberta in 1928. He has been a member of the staff since 1936 and Head of the Department of Operative Dentistry since 1949. Dr. MacLean has also had consummate interest in roentgenology and in this respect spent the session 1955-1956 in the University of California in oral roentgenology and oral diagnosis.

He has been a popular lecturer and clinician at numerous dental meetings. He is a Fellow of the American College of Dentists and the International College of Dentists. Dr. MacLean is presently serving as President of the National Dental Examining Board of Canada.

Calgary and District Dental Society

The Calgary and District Dental Society met December 2nd, 1957, in the Palliser Hotel. The speaker was Dr. J. Sanford Moose from San Francisco, California. Dr. Moose, an eminent oral surgeon, spoke to the society on the removal of large cysts and tumors from the oral cavity. He also spoke on resection of the mandible in selected cases of prognathism. Both lectures were illustrated with exceptionally fine motion pictures and those present gained much from Dr. Moose's lectures.

The first meeting of the new year was held January 6th in the Palliser Hotel. The program was listed as "Home Talent Night" since all those participating were members of the society.

After dinner Dr. James Zimmerman spoke to the society about the affairs of the Canadian Dental Association. He discussed national health insurance, conventions, business procedures of the national organization and several other topics.

The program before dinner consisted of



DR. HECTOR R. MacLEAN
Dean-Elect, Faculty of Dentistry
University of Alberta.

table clinics which proved to be very popular with the large number of members attending. The subjects of the clinics included orthodontics, prosthodontics, paedodontics, oral surgery, and operative dentistry. The success of this program has caused the executive to think seriously of making it an annual event.

The evening was concluded with a fine presentation of movies by Dr. R. R. McIntyre. The film he showed was taken by him in Europe and was highlighted by the recent international meeting in Rome.

Plans are under way for the annual North-South bonspiel which will be held again this year in Red Deer. It is understood that some excellent rinks will be entered from Calgary, perhaps good enough to defeat the Edmonton contingent.

W. A. N.

Edmonton District Dental Society

The January meeting of the Edmonton District Dental Society was addressed by Dr. A. R. Schrag, psychiatrist with the Provincial Guidance Clinic. A recent survey in the United States indicates that 10 per cent of the population, other than the residents of mental institutions and jails, are suffering from serious mental illness and the situation here must be similar. Dr. Schrag said. In 1955 there were 1,287 cases treated in the Edmonton Clinics and 87 per cent of those treated were under 20 years of age. These young people must not be



Photo Maurice Burlin.

DR. L. W. BEAMISH

President, British Columbia Dental Association.

looked upon as defective or delinquent but just ill. The clinic operates on the belief that early detection and correction of emotional problems can prevent serious disorders in later life. Play therapy and training at the clinic are the two main aids used in restoring these young people to healthy lives.

In dealing with emotionally disturbed children in the dental chair, Dr. Schrag advised extensive premedication and resort to general anaesthesia. This he thought was preferable to risking psychic trauma.

G. C.

BRITISH COLUMBIA

Victoria and District Dental Society

A successful meeting was held at the Empress Hotel on Monday, January 20, when fifty-three members and guests gathered to hear Drs. W. L. Elliot and W. M. Joiner of Vancouver discourse on the taking of impressions, methods of temporary relining and bite registration.

The introduction was given by Dr. W. G. Dempsey. The lectures were illustrated by a series of coloured slides, and the clarity of thought and excellent delivery of the speakers produced a relaxed and attentive

audience. After some discussion, Dr. H. R. Turner voiced the thanks of the society, which then proceeded to its regular business meeting.

Vancouver and District Dental Society

Once again the fruition of study club endeavour was displayed at Home Talent Day on February 4, when chair and table clinics were presented to interested gatherings at afternoon and evening sessions in the Banquet Room of the Hotel Vancouver. Dr. Basil Plumb, who was responsible for the program, is accorded much credit for the event of the year.

There were five chair clinics given by: Dr. J. M. Wark and Dr. R. L. Scharff (Inter-city Gold Foil Club), Dr. G. F. Copithorne, Dr. K. E. Murchie and Dr. L. O. Lind.

The table clinics comprised many aspects of dentistry, with these study clubs represented:

Inter-city Paedodontia Study Club
Orthodontic Study Club
Vancouver Periodontia Study Club
Occlusion Study Club
Vancouver Ferrier Gold Foil Study Club
Vancouver Endodontic Study Club
Periodontia Study Club
Oral Diagnosis Study Club
Downtown Prosthodontia Study Club.

The table clinicians were: Drs. D. A. Anderson, H. E. Simmons, E. R. Eburne, D. G. Burns, M. M. Mickelson, W. R. Scott, R. B. Telford, C. W. Gardner, W. M. C. Kynoch, K. E. Murchie, M. M. Chechik, C. E. Craig, J. F. Reid, D. T. Zack, D. H. Warren, L. R. Bowlsby, J. B. Wolfe, D. G. Marshall, M. Panar, M. Krasnoff, N. L. Pearlman, H. J. Killas, and R. I. Yorsh.

D. H. M.

B.C. Dental Association

On the first three days in May the annual convention will be held in the Hotel Vancouver. The committees in charge of program and arrangements have evolved an outstanding series of clinics and entertainment. Dr. L. W. Beamish, the President, has announced that the main essayists will be Dr. Eugene Skinner of Northwestern University Dental School, who will speak on "Dental Materials", and Dr. F. Lloyd Jacobson, University of Washington Dental School, who has chosen the subject "Dental Operatives".

D. H. M.

MANITOBA

Joint Meeting of The Winnipeg Dental Society and Manitoba Dental Association

Something new was added to Manitoba "Dental History" in January, 1958. This was a two-day convention designed primarily for Manitoba dentists alone. One of the big problems facing the Manitoba Association each year is to encourage a greater participation of the dentists from outside Winnipeg in the activities of the Association, and particularly to attract these men into Winnipeg for the Annual Meeting of the Association, when these activities are all reviewed and when criticisms and suggestions can be made.

The Association Executive, with the co-operation of the Winnipeg Dental Society, tried to overcome this problem by arranging a full two-day convention program. The response from the rural members was not overwhelming in numbers, but at least it was encouraging, and the enthusiasm of those men who did come in, bodes well for future meetings along the same theme.

The program was as follows:

Monday, January 20, 1958:

9.00 a.m. - 5:00 p.m. — Winnipeg Dental Society Clinical Meeting — Dr. John H. Mosteller, Mobile, Alabama.

6.30 p.m. - 12:30 a.m. — Cocktail Party — Dinner Dance.

Tuesday, January 21, 1958:

10:00 a.m. - 12:00 noon — Dr. J. W. Neilson, Dean, Faculty of Dentistry, University of Manitoba.

2:00 p.m. - 4:30 p.m. — Business Meeting, Manitoba Dental Association.

Dr. Mosteller is one of the most sought after clinicians in the United States, as shown by his record of appearing on the programs of over 80 dental meetings in the last 10 years. He has also conducted post-graduate courses and lectured at numerous dental schools and has contributed many articles and papers to a number of text

British Columbia Dental Association Convention

Vancouver Hotel, Vancouver, B.C. — May 1, 2 and 3, 1958

WEDNESDAY EVENING Press Dinner, Registration, Fraternal reunions.

THURSDAY Opening Ceremonies. Speaker: Mayor Fred Hume of Vancouver, B.C.
Lectures during the day. Commercial Exhibits.
EVENING: Cocktails, buffet supper and dance at the Thunderbird Room, North Vancouver.

FRIDAY Lectures during the day. Commercial Exhibits. Annual meetings of the College of Dental Surgeons and the Dentists' Legal Protective Association.
EVENING: Open.

SATURDAY Chair and Table Clinics. Commercial Exhibits. Luncheon and Annual Meeting of B.C.D.A.
EVENING: President's Ball and Supper, Vancouver Hotel.

FEATURED ESSAYISTS

Dr. Eugene W. Skinner, Professor of Physics, Northwestern University, who will speak on Dental Materials.

Dr. F. Lloyd Jacobson, Professor of Operative Dentistry, University of Washington, who will speak on the Choice of Dental Materials in Dental Treatment Planning.

Dr. Gerald L. Burke, Orthopaedic Surgeon, Vancouver, B.C.

THE LADIES will have a full programme, including a sherry party, sightseeing, luncheon, tea, etc.

Address enquiries to:

Dr. Ross Upton, Executive Secretary, 217 Medical-Dental Bldg., Vancouver 1, B.C.

books and journals, including our own C.D.A. Journal. The Winnipeg Society was fortunate and proud that he was making his initial appearance in Canada before our group.

Dr. Mosteller's talk was broken into three segments —

- (a) Cavity preparation for amalgam restorations.
- (b) Manipulation of silver amalgam for improved restorations.
- (c) The fee problem in operative dentistry.

Dr. Mosteller handled this oft-repeated subject matter in a very refreshing and stimulating manner. He showed that through much reading and considerable personal research, he had a masterful knowledge of dentistry, but he also showed that he could impart a great deal of this knowledge to his audience. The humor he injected from time to time certainly added to the over-all success of the talk. The membership paid him the ultimate compliment of remaining in attendance 100 per cent until his very last word was spoken.

Dr. Harvey Allen very adequately expressed our Society's thanks to Dr. Mosteller at the conclusion of the meeting.

The business meeting of the Society was held following the luncheon, and the executive was very grateful to have over 90 attend. Dr. Walter Grenkow, the President, and Dr. George Danzinger, the Secretary-Treasurer, responded to this large gathering by conducting a thorough but short discussion of all the Society matters.

The social wind-up for the day took the form of a cocktail party, dinner and dance, and much credit must be given to Dr. Ivan Jackson, who handled all the necessary arrangements to make this a complete success.

Dr. T. J. Cooke, President of The Manitoba Dental Association, took care of the formal part of the evening by warmly welcoming all members, and introduced many of the out-of-town dentists and their wives to the gathering. Informality was the keynote from then on, with excellent entertainment, good dance music and adequate refreshments.

Tuesday —

Dr. Neilson spoke first as a periodontist, later as Dean of our Dental School. His paper on "The Problem of Prognosis in Periodontal Disease" was extremely thorough and practical. He covered each aspect of both the condition and the patient that should be considered in order to make a proper diagnosis. He made his talk very easy to follow by distributing complete theses, outlining each point he mentioned, and by illustrating many of those points with excellent slides.

A better knowledge of this field of dentistry is sorely needed, and we in Manitoba are indeed fortunate in having as our Dean, a man such as Dr. Neilson who has this knowledge and whose influence will undoubtedly be felt in the teaching at the school.

Dr. Neilson then reverted to his new role as a Dean and made the first announcement that the University of Manitoba Dental Faculty would be accepting students for the fall of 1958. It had been feared that this first class would have to be postponed for a year, so this announcement was warmly welcomed. Dr. Neilson then summarized what had been accomplished for the new Faculty, covering mainly the problems of obtaining staff and finalizing the building plans. He showed on slides the blueprints and plans of the proposed building and explained the physical set-up. This naturally was of extreme interest to every Manitoba dentist, and Dr. Neilson was very warmly thanked for his efforts. He is certainly to be congratulated on the amount he has accomplished in his relatively short time as Dean.

The Annual Business Meeting of The Manitoba Dental Association was held following the noon luncheon, Dr. T. J. Cooke presiding. The following agenda was covered.

- (i) A one-minute silence was observed in tribute to the six members who passed away since the previous meeting.
- (ii) Introduction of new members. Eleven men who had registered in the Province during 1957 were presented, and also given their certificates.
- (iii) Introduction of the new Association Board.
Dr. J. O. Brown announced that Dr. Cooke had been re-elected from District No. 1, and that Dr. F. W. Parrott, Portage la Prairie, Manitoba, had been elected from District No. 2; and that Dr. Z. Kasloff had been elected as the new member of the Board from District No. 1. He also announced that the Board had elected the following slate of officers:
Dr. T. J. Cooke — President
Dr. F. W. Parrott — Vice-President
Dr. J. O. Brown — Secretary-Treasurer, Registrar.
- (iv) The Minutes of the 1957 Meeting, the Financial Statement for 1957 and the Proposed 1958 Budget were all presented by Dr. J. O. Brown.
- (v) Dr. Cooke gave the President's Report. He reviewed the numerous activities in which the Association had participated. Much of the work went unrecognized by the general member-

ship, but it all called for a lot of extra time and effort. Dr. Cooke thanked the Board members for their great assistance, and he also pointed out that numerous men from the general body had, when asked, helped the Board tremendously in accomplishing its numerous tasks.

(vi) Committee Reports were presented by the following 1957 Chairmen:

- (a) Dr. W. J. Riley, Manitoba Rep. to the C.D.A.
- (b) Dr. J. B. Rumberg, Manitoba Rep. to the N.D.E.B. of Canada
- (c) Dr. M. G. Garvin, Scholarships
- (d) Dr. M. J. Snidal, Illegal Laboratories
- (e) Dr. Z. Kasloff, Ancillary Help
- (f) Dr. J. G. Elsey, Mediation
- (g) Dr. F. W. Jones, Dental Public Health
- (h) Dr. John Abra, Public Relations
- (i) Dr. A. C. McInnes, Blue Cross
- (j) Dr. F. W. Parrott—Co-Ordination

(vii) Presentation of Life Membership. The following men were honoured upon reaching the age of 70 during the year 1957 —

- Dr. J. M. Benson — 48 years of practice
- Dr. S. S. Flanagan — 40 years of practice
- Dr. F. W. Fell — 43 years of practice

The conclusion of the meeting was followed by numerous congratulations to all members of the Association Board for their vision and hard work in preparing and carrying through such an entertaining and instructive type of Annual Meeting.

J. P. B.

NOVA SCOTIA

Halifax County Dental Society

The Halifax County Dental Society met at the Nova Scotian Hotel on Thursday, January 16th with the President, Dr. Carl Dexter, in the chair.

Dr. H. C. Read, Haematologist, gave a very interesting and informative lecture on various blood tests and the significance of blood analysis.

The new Faculty of Dentistry Building of Dalhousie University opened for classes on January 27th. It is a real pleasure and a genuine stimulus both to the Faculty and to the students to carry on instruction in such modern surroundings. Much credit must be given to Dean MacLean and Dr. R. H. Bingham for their untiring efforts during the building phase of the new school. The official opening of the school will take place in September.

H. M. E.

ONTARIO

Perth County Dental Society

Dr. Murray Hunt, M.Sc.D., a former Stratford dentist now doing research work with the Faculty of Dentistry at the University of Toronto, was a guest at the annual dinner meeting of the Perth County Dental Society held recently. Dr. Hunt presented a paper on Vitamin C and its relation to gingivitis.

A native of Toronto, Dr. Hunt was with the Dental Corps during the Second World War. He moved to Stratford in 1946 and practised there until three years ago. He was presented with a brief case at the dinner meeting.

A presentation of an electric clock was made to Dr. J. A. Boyd by the society, in appreciation of his services as president of the Ontario Dental Association.

Seven guests from the London Dental Society were present. Dr. Cecil Strachan, London, president-elect of the Ontario Dental Association, was also a guest at the dinner held in the Queen's Hotel. The presentations were made at the Perth Regiment Armoury officers' mess.

London and District Dental Society

The London and District Dental Society held its third regular meeting of the 1957-58 season Saturday, January 18th, 1958, at the Hotel London. The meeting consisted of both an afternoon and evening session. Sixty-two members and their guests from London and district were in attendance.

The scientific portion of the program was conducted by Dr. L. E. MacLachlan of Ottawa. The afternoon session was devoted to a discussion and demonstration of techniques and equipment used in oral photography. The afternoon program was followed at 6:30 p.m. by dinner and a business meeting which was conducted by Society President Dr. W. H. E. Mason. The business meeting was followed by Dr. MacLachlan's evening clinic "Dentogenics" which dealt primarily with the problem of aesthetics in denture construction. Techniques involved in arranging the teeth, contouring and colouring the base material to produce a finished denture which fits the sex, age, and personality of the individual were discussed in minute detail. Many excellent colour slides were shown to support the lecture material. Dr. MacLachlan was introduced by Dr. H. R. Sykes and thanked on behalf of the Society by Dr. J. A. Gillies.



Photo Ashley & Crippen.

DR. WILLIAM W. BRESLIN,
President, University of Toronto, Alumni Association.

**Dr. William W. Breslin,
U of T Alumni President**

Dr. William Wolfe Breslin was recently elected president of the University of Toronto Alumni Association. This is only the second time that a graduate of Dentistry has held this position. He is a worthy successor to the late Dr. John Bothwell who contributed so much to the Alumni.

Dr. Breslin graduated from the University of Toronto in 1924 and began specialization in Oral Surgery in 1930. He has been extremely active in dental organizations, having been president of the Ontario Society of Oral Surgeons, past president of the Dental Alumni and presently contributing editor of the Journal of the Ontario Dental Association. He is also past president of the Alpha Omega Alumni.

Dr. Breslin in his spare time paints, plays a little golf at Oakdale and is an active member of the Rotary Club. He is the proud father of two boys and a girl.

He has been on the Board of Directors of the University of Toronto Alumni since 1949. Besides his busy practice he is head of the Oral Surgery section of the Department of Dentistry in the new Mount Sinai Hospital, Toronto.

E. R.

Hamilton Dental Association

The Hamilton Dental Association opened the 1957-58 season with its annual golf tournament under the chairmanship of Dr.

E. Corsini. The trophy for low net was won by Dr. M. Saunders with Dr. S. Holick winning the low gross division.

The dinner meetings, presided over by Dr. W. Feasby and arranged by Programme chairman Dr. S. Rosen, began in October with the London Orthodontic Study Club giving its excellent examination of incipient orthodontic conditions. This group gave one of the finest presentations the Association has attended, and gave impetus to the formation of study groups within the Association's Study Club. As their investigations develop, the study groups each hope to provide material for a study club meeting.

The November meeting enjoyed the presentation of Dr. Elliot Siegel, an oral surgeon who also holds a medical degree. Dr. Siegel spoke on drugs with particular emphasis on the use and misuse of antibiotics. The members were also given a few thoughts on dental emergencies from the medical, as well as dental, viewpoint.

In December the Annual Ladies' Night was held at the Argyll and Sutherland Highlanders' Mess, with dinner and dancing, and Kodachromes of their European visit shown by Dr. and Mrs. C. Watters.

The membership was host to the Dental Nurses' and Assistants' Association at its Christmas Meeting. Mr. Ivan Miller of the Hamilton Spectator very ably introduced Mr. Ted Reeve, Sports Columnist of the Toronto Telegram, who pleased the football enthusiasts in his audience by his flattering remarks about their Hamilton players in particular and football characters in general. The meeting was pleasantly surprised to have a group of its members armed with musical instruments close the evening with a jam session and carol singing.

R. F.

Peterborough and District Dental Society

The first meeting in 1958 of the Peterborough and District Dental Society was held January 22nd at the Empress Hotel in Peterborough. Twenty members were present with Dr. Reg. Campbell of Lakefield, presiding.

After dinner, a lengthy business meeting was held. Dr. Wes Langmaid of Oshawa, representative of District No. 2 to the R.C.D.S., spoke on the latest activities of the Board. The guest clinician was Dr. A. Bruce Hord, who addressed the society on "Direct Acrylic and Silicate Cement Restorations — Which, When, Where and Why".

R. N.

Thunder Bay Dental Association

Dr. John V. Siren was elected president of the Thunder Bay Dental Association at the annual dinner meeting in the Royal Edward Hotel recently.

During the meeting Dr. F. A. Blatchford was honored on his retirement from active practice with an honorary life membership in the association and Dr. B. Turner was welcomed as a new member.

Other officers elected were Dr. J. A. Stitt, vice-president; Dr. L. Opaski, secretary-treasurer; Dr. W. Kostyshyn, past president, and Dr. W. Macdonald and Dr. J. S. Strachan, directors.

Head table guests, representing various professions included: Dr. B. W. Stevens, Thunder Bay Medical Association; D. S. Cheadle, Thunder Bay Law Association; P. Heney, Thunder Bay Pharmaceutical Association; W. Kyro, architectural society; W. Stevens, forestry society, and G. Walker, engineering society.

U of T Dental Alumni

The second Alumni Faculty Day was held recently at the Faculty of Dentistry building. A very interesting and modern programme was arranged by Dean Roy Ellis and his staff. Clinicians who took part were Drs. P. G. Anderson, C. O. Monteith, James Purves, and L. Twible. Case histories from the infirmary were presented by the students. Over sixty new Alumni members from all over Ontario were among those attending. This day becomes increasingly popular. Following the election of officers for 1957-1958 the Dean gave a progress report on the new Dental Building.

Alumni Executive for 1957-1958

Honorary President	Dr. A. D. A. Mason
Honorary President	Dr. J. E. Tilson
Past President	Dr. J. M. Crawford
President	Dr. R. D. Leuty
President Elect	Dr. H. A. Hunter
Secretary	Dr. F. T. Pearson
Treasurer	Dr. W. Kerr

District Representatives

North Toronto	Dr. M. Cornish
Central Toronto	Dr. F. C. Lackie
East Toronto	Dr. J. Freeman
West Toronto	Dr. F. Dempster
Downtown Toronto	Dr. H. Travers
Hamilton, Ontario	Dr. W. Banting
Oshawa, Ontario	Dr. D. Langmaid
1957 Graduate Representative	Dr. L. Tait

QUEBEC

Montreal Dental Club

The 60th Annual Meeting of the Montreal Dental Club was held in the Queens Hotel on Jan. 23, 1958, Dr. E. Toby Cleveland presiding. Dr. Cleveland welcomed Drs. Wilf Robinson, Jack McMullen and Mat Reutcky Jr. All are recent applicants to the Montreal Dental Club.

The annual reports for 1957 were presented:

Dr. Al Pye, treasurer of the Club, gave the financial report for the last session.

Dr. Bruce Ward, chairman of the Fall Clinic, gave his report and commented on combining of next year's Fall Clinic with the National Convention here in Montreal.

Dr. Clayton Bourne, as Historian and Archivist, submitted his annual report on the Club and members' activities.

Dr. Whitey Schutz, a co-chairman of the Golf committee, gave his report on the spring and fall tournaments.

Dr. Doug Armstrong, chairman of the public relations committee, gave his report.

Dr. George Dundass reported for the insurance committee.

Dr. Gerald Racey, President of the C.D.A., spoke on behalf of the C.D.A., informing members of happenings at Headquarters, and discussing aspects of dental health schemes.

Dr. Jean Dorion, the Montreal Dental Club's representative to the C.D.S.P.Q., reported on the College's behalf.

Dr. Cleveland, as retiring president, thanked all those who had assisted him in the past year, and wished the incoming executive every success in the coming year. He then turned the meeting and his office over to the incoming president, Dr. R. F. Harvey.

Dr. Howard Oliver, on behalf of the Club, warmly thanked the outgoing officers for their excellent handling of the club's affairs during the past year.

Dr. Rod. Lefebvre then read the nomination slate for 1958:

Hon. President, Dr. E. T. Cleveland; President, Dr. R. F. Harvey; Pres. Elect, Dr. D. C. Gordon; Secretary, Dr. W. R. F. Dohn; Treasurer, Dr. F. L. Burns; Hist. & Archivist, Dr. C. C. Bourne.

Directors for a period of two years: Dr. L. E. Kent Jr., Dr. P. C. Staples, and Dr. J. E. Van Vliet.

Directors to complete term of elected office (one year): Dr. F. O. Fredericks, Dr. M. Hebert, and Dr. D. W. Henry.



Meeting of the Montreal Section of the American Academy of Dental Medicine, held in January at the Reform Club in Montreal.

Dr. Peter Lefebvre reminded members that the Annual Winter meet is to take place at the Chanteclere, St. Adele en Haut, Feb. 7-9 inclusive. This year the wives have been invited to share in the gala affair.

Dr. Harvey then gave a brief resumé of the year's activities which foretells of an active and full year ahead.

W. D. S.

Montreal Orthodontic Society

The annual meeting of the Montreal Society of Orthodontists was recently held in the Berkeley Hotel.

The following officers were elected: Dr. A. J. Colle — president; Dr. H. T. Oliver — vice-president; Dr. C. Asselin — secretary-treasurer.

C. A.

Montreal Endodontia Society

This year under the capable leadership of Dr. Jacques Bélanger, the members of the society have been presented with an interesting and varied program. Early in the season a panel composed of Drs. L. Rosen, G. Dundass and V. Tremblay considered several pertinent problems in Endodontics. A dinner meeting was held in the Reform Club at which Dr. Hamilton Baxter gave a talk on "Problems in oral surgery relating to Endodontics". In December Dr. Umberto Cuttler from Mexico addressed the society.

As a climax to the year's activities, Dr.

George Stewart of Philadelphia will speak before the group on April 18th. Dr. Stewart is at present the President of the American Association of Endodontists.

F. V.

Montreal Section American Academy of Dental Medicine

On January 15th, the Montreal Section of the American Academy of Dental Medicine held a dinner meeting at the Reform Club. The guest speaker was Dr. Mezl, who possesses both medical and dental degrees, formerly an associate professor at the University of Prague and now an associate professor at the University of Montreal. He discussed the theory of focal infection and its dental relationships; stating that the three basic theories are 1) the bacteraemia-septicaemia theory, 2) Allergic origin theory, 3) Neurodystrophy theory.

Following Dr. Mezl's fine address a brief but lively question period followed. Dr. R. F. Harvey then thanked the guest speaker.

American Academy of Dental Medicine Announces Twelfth Annual Meeting

The American Academy of Dental Medicine will hold its Twelfth Annual Meeting in Montreal, Canada, at the Sheraton Mount Royal Hotel, on Thursday, Friday and Saturday, May 29, 30 and 31, 1958.

An impressive scientific program has been

arranged for this three-day seminar, presenting the interrelationship of oral medicine and general medicine, and highlighting such topics as The Dentist and the Endocrine Problem, The Internist, The Obstetrician, The Pharmacologist, Inflammatory Diseases of the Mucous Membranes of the Mouth, Contact Dermatitis of the Face and Hands. Participating are: Dr. L. P. Ereaux, Dept. of Medicine of McGill University; Dr. Allen Gold, Consultant in Endocrinology, Queen Mary Veterans' Hospital; Dr. G. W. Halpenny, Dept. of Medicine, Queen Mary Veterans' Hospital; Dr. Robert F. Harvey, Faculty of Dentistry, McGill University; Dr. Georges Leclerc, Dept. of Medicine, University of Montreal; Dr. J. L. Macarthur, Montreal General Hospital; Dr. Kenneth I. Melville, Dept. of Pharmacology at McGill University.

A special feature of the program will be a presentation by the Cleft Palate Team of Montreal Children's Hospital, under the Chairmanship of Dr. F. M. Woolhouse, who will discuss the overall treatment and rehabilitation of the cleft palate patient.

Honorary Membership in the Academy will be accorded Dr. Adelard Groulx and Dr. Don W. Gullett.

All members and other interested physicians and dentists are cordially invited. A program of entertainment and sightseeing has been arranged. For programs and reservations address: Dr. George Witkin, 45 So. Broadway, Yonkers 2, New York.

D. Prescott Mowry Memorial Lecture

The members of the dental profession in Montreal, in common with their confrères in the fields of periodontology and dental education have felt very deeply the death three years ago of Dr. D. Prescott Mowry, Dean of the Faculty of Dentistry, McGill University.

The Mount Royal Dental Society has always respected the late Dean Mowry as an inspired leader in dentistry and dental education. As a friendly and interested counsellor to the Society, he held a special place in its affection.

Wishing to pay tribute to his memory and perpetuate his ideals, the Mount Royal Dental Society has resolved to institute an annual D. Prescott Mowry Memorial Lecture, to which all dentists and dental teachers in Montreal and its environs are invited.

The committee in charge is pleased to announce that the inaugural Lecture will

be given on Monday evening, April 14th, 1958 at 8:00 p.m. in the Amphitheatre of the Montreal General Hospital. The speaker will be B. O. A. Thomas, B.A., D.D.S., M.S., Ph.D., clinical professor of periodontics, College of Physicians and Surgeons, San Francisco, California. He has chosen as his topic "Occlusion and Periodontal Disease".

Dr. Thomas has taught at Columbia University and the University of Washington, previous to his present appointment. He practises periodontics in Palo Alto, California, and has published numerous papers and contributed to four textbooks on dentistry. He is a Diplomate and Director of the American Board of Periodontology.

All interested members of the dental profession are cordially invited to attend.

A. J. C.

SASKATCHEWAN

Saskatoon Dental Society

The Saskatoon Dental Society played host to a panel which discussed Cleft Palates. The panel was a team from one Physical Rehabilitation centre in Saskatoon, namely — Dr. R. Chasmar, Plastic Surgeon; Dr. E. Stark, Otolaryngologist; Dr. A. Buckwold, Paediatrician; Dr. P. Cameron, Director of Rehabilitation Centre; Dr. J. Schachter, Orthodontist.

Dr. Schachter introduced the members of the panel and Dr. Cameron was the moderator. The contributions of the various members were related, as the nature and value of the work clearly indicated. By possessing such a team, it was shown that cases could be completed and that the personnel of the team all benefited greatly.

General discussion followed the presentation by the panel.

L. D. H.

Dr. Chegwin Speaks Out on Milk

Dr. A. E. Chegwin, Director of Dental Health for the Saskatchewan Health Department, says a New Zealand report that milk has had detrimental effects on children's teeth is nonsense. Three unidentified New Zealand dentists were reported to have said that a free milk scheme in the country led to a high rate of dental decay.

Dr. Chegwin said that milk alone is beneficial and harmless. It is only in combination with cookies and other foods of like nature that it could create a sticky combination on the surface of the teeth which could be conducive to decay.

GENERAL NEWS

Canada's Population

Increasing at a record rate, Canada's population reached an estimated 16,887,000 on January 1 this year, an increase of 543,000 or 3.3 per cent from the year-earlier total of 16,344,000, according to a special estimate by DBS to meet a widespread demand for figures at the first of the year. The population was estimated at 16,860,000 on December 1, 1957, 16,745,000 on September 1, 16,589,000 on June 1, and 16,420,000 on March 1.

The 12-month increase compares with gains of 425,000 (2.7 per cent) in 1956, 384,000 (2.5 per cent) in 1955, 430,000 (2.8 per cent) in 1954, 432,000 (2.9 per cent) in 1953, and 405,000 (2.8 per cent) in 1952. The population growth was 806,000 from the 1956 Census total of 16,081,000 and 2,878,000 from the 1951 Census count of 14,009,000.

Enrolment at U.S. Dental Schools Sets Record

As of October 15, 1957, dental schools in the United States had an enrolment of 13,279 undergraduate students, believed to be a record high. This was a gain of 275 undergraduates over the enrolment for the corresponding date a year earlier and more than 1,100 higher than the enrolment for 1951, according to Dr. Shailer Peterson, secretary of the A.D.A. Council on Dental Education. Total classes were: freshmen, 3,600; sophomores, 3,363; juniors, 3,227, and seniors, 3,089. The undergraduates included 13,179 men and 100 women. In addition, dental schools had a total enrolment of 2,366 other students including 123 specials, 474 graduate, 455 postgraduate, and 1,314 dental hygiene students. The schools also had an enrolment of 5,017 students for refresher or continuation courses.

Canadian President of Alpha Omega

The Alpha Omega Fraternity held its annual convention in Baltimore, Maryland, on December 29, 30, 31, 1957, at which Dr. John A. Sherman of Toronto, was elected National President. The other officers are as follows:

National President-Elect — Dr. David L. Dyen, Philadelphia, Pa.

National Secretary — Dr. Walter I. Levine, Baltimore 1, Maryland.

National Treasurer — Dr. Michael Frost, Passaic, New Jersey.

American Council on Education Announces Survey Director

The American Council on Education this spring will launch a broad survey of dentistry in the United States under the direction of Dr. Byron S. Hollinshead, lately Director of the Technical Assistance Department of UNESCO in Paris. The \$400,000 project will be completed in two years.

Dr. Hollinshead, who was formerly consultant to the Commission on Financing Higher Education and President of Coe College in Iowa, is author of *Who Should Go to College?* and co-author of *General Education in a Free Society*, the Harvard Report published in 1945. He is well known as the author of many articles published in professional journals and popular magazines.

Dr. Hollinshead will assume his duties as Director of the two-year survey on February 1st. His staff, with headquarters in Chicago, will include an assistant director, five or six technical and editorial staff associates, and a secretarial and clerical staff of six to eight persons.

The objective of this impartial and critical study is "to assess the achievements, resources, and potentialities of dentistry in the United States, to determine desirable areas of future development, and to recommend methods for the better provision of an essential service to the American people." It will center on four areas: dental education, dental research, dental practice, and dental health.

The survey is being undertaken at the request of the American Dental Association and will cost \$400,000 which has been provided as follows: The Kellogg Foundation, \$250,000; American Dental Association, \$120,000; Rockefeller Brothers Fund, \$25,000; and the Louis W. and Maud Hill Family Foundation, \$5,000.

A national commission, composed of representatives of such groups as education, management, labor, medicine, and dentistry, has been appointed by the American Council on Education and has final authority for the conduct and administration of the survey. Dr. Arthur S. Adams, President of the American Council on Education, said that membership on the Commission has been carefully planned to provide the widest possible divergence of interests consistent with practical operation of the survey.

Arthur S. Flemming, President of Ohio Wesleyan University in Delaware, Ohio, and former Director of Defense Mobilization, is Chairman of the Commission. Other members are: Otto W. Brandhorst, Secretary, American College of Dentists; George Bugbee, President, Health Information Foundation; Howard Chase, President, Communications Counselors, Inc.; Anna Fillmore, General Director, National League for Nursing, Inc.; Willard C. Fleming, Dean, Dental School, Medical Center, University of California; Don W. Gullett, Secretary, Canadian Dental Association; Herman E. Hilleboe, Commissioner of Health, State of New York; Lawrence A. Kimpton, Chancellor, University of Chicago; Charles P. McCormick, Chairman of the Board, McCormick and Company; Lee W. Minton, International President, Glass Bottle Blowers Association of the U.S. and Canada; Franklin D. Murphy, Chancellor, University of Kansas; Percy T. Phillips, D.D.S.; Philip N. Powers, President, Inter-nuclear Company, and Henning W. Prentis, Jr., Chairman of the Board, Armstrong Cork Company.

The Commission and its Director will be assisted in the four specific areas of work by corresponding committees, the membership of each of which will be made up of individuals having special competence and judgment in that particular area.

Dr. Arthur S. Adams, President of the American Council on Education, has said of the project: "This survey can and should be as important to dentistry in all of its aspects as the Flexner Study of 1908 was to medicine. I also see the Survey of Dentistry in the same context as the Survey of Pharmacy, which was conducted by the American Council on Education in 1949 under the brilliant directorship of Dr. Edward C. Elliott. The profession of dentistry deserves the thoughtful examination which this survey can provide."

Dentists Urged to Support W.H.O.

Increased utilization by national agencies of the dental health services available through the World Health Organization is urged by Dr. Obad H. Moen, chairman of the Council on International Relations of the American Dental Association.

Dr. Moen described the program being carried on by the W.H.O. through its dental health officer as being of "inestimable value to the dental profession in its efforts to bring about increased public awareness of the value of dental health."

The American dental official urged that all national dental and medical associations take the initiative in developing specific projects within their own jurisdictions and

cooperative activities with neighboring nations in support of the W.H.O. dental health program.

In the United States, the Council on International Relations serves as the liaison agency for American dentists with both the Federation Dentaire Internationale and the W.H.O. Its current activities include the recruitment of supporting members in the United States for the F.D.I. and the promotion of attendance of American dentists at the International Dental Congress and other International meetings.

In cooperation with the United States Department of State, the Council has arranged for the distribution of dental textbooks, monographs, films and other items to various foreign nations. In recent years sets of the *Index to Dental Literature*, bound copies of *The Journal of the American Dental Association* and the *Journal of Oral Surgery* and various other books and journals have been distributed to the dental libraries in more than 25 nations.

Following the Second World War, the Council served as a co-sponsor with CARE in raising funds to restore dental books in war-damaged libraries in Europe and Asia. The Council also aided in the successful campaign of the American-Korean Foundation to secure dental supplies and equipment for Korean dentists. Thousands of dollars' worth of dental supplies were contributed by American dentists.

Dental X-Rays Found No Reason For Concern

Dental patients need have no reason for concern about routine dental x-ray examinations, The Journal of the American Dental Association said editorially recently.

Any concern about genetic hazards in dental examinations is unrealistic in view of the very small amounts of exposure, less than that received annually by individuals from natural sources. The editorial also emphasized the continuing efforts in development of new equipment and techniques to reduce exposure even further.

The editorial quoted three recent statements by radiation experts and research scientists regarding the safety of dental x-rays for diagnostic purposes. One was that of the Council on Dental Research of the American Dental Association, issued on November 22 after a restudy of current evidence. The statement follows:

The Council on Dental Research of the American Dental Association reaffirms its belief that there is no justification for undue concern by patients undergoing x-ray examinations of the teeth and jaws.

X-ray examinations are an essential aid in

dental care. The curtailment of such examination in oral health service would handicap the dentist and impair proper diagnosis and treatment planning.

Millions of x-ray examinations have been made by dentists without a report of injury to a patient. Recent research has shown that x-ray examinations of the teeth now can be made with even less radiation when the x-ray beam is properly filtered, centered with a lead diaphragm, and when super-speed film, increased kilovoltage and longer developing time are used.

Additionally, the editorial cited the findings of a panel of radiation experts on use of x-ray in dental offices at the annual meeting of the American Dental Association in Miami on November 4. The panel's conclusions follow:

1. Exposure of the human body to x-ray radiation is biologically undesirable and should be kept to the lowest possible level without sacrificing the essential uses of radiation in diagnosis and therapy.

2. Dental radiographs are an indispensable diagnostic aid in the maintenance and care of the teeth, which in turn contribute greatly toward the preservation and improvement of the health of the individual.

3. An x-ray examination of the entire mouth can be made with ultra-fast films and a small, properly filtered x-ray beam, which exposes the patient's face to a total of 5 roentgens (with no one area of skin receiving more than 1.5 roentgens) and the reproductive cells to an effective tissue dose of no more than 0.0005 roentgens. The annual exposure of the face and reproductive cells to these amounts of radiation during an x-ray examination of the entire mouth constitutes a very minor genetic and biological hazard to the patient as compared with the potential benefits to the dental health of the patient.

As the third statement, the *Journal* quoted a report by the Committee on Radiation Protection of the American Academy of Oral Roentgenology, presented at its annual meeting November 2. The statement follows:

Concern, regarding the exposure of the population to x-ray radiation, has swung like a pendulum from the indifferent attitude of a few years ago to the present state of undue apprehen-

sion. This change in attitude has had both good and bad effects in dentistry.

The extreme concern displayed by some persons has led them to forego the obvious benefits of x-ray examinations of the teeth because of the remote possibility of some genetic or pathologic damage occurring. They ignore the accepted fact that dental radiographs are an indispensable diagnostic aid in the maintenance and care of the teeth, which in turn contribute greatly toward the preservation and improvement of the health.

The present awareness by the dentist of his role in the exposure of the population to x-ray radiation has stimulated research into new x-ray techniques which use radiation far more efficiently and reduce greatly the exposure of both the patient and the dentist.

Methods for producing complete dental x-ray examinations are available now that present no greater hazard to the patient's genetic system than does his minute daily exposure to cosmic rays and other naturally occurring radiation. No one has any concern regarding this small, unavoidable, daily exposure by this naturally occurring radiation because man has always been exposed to it and has survived quite successfully.

It is the conviction of the American Academy of Oral Roentgenology that, since dental x-ray examinations can be made with very small amounts of radiation when the most modern techniques are used, there should be no cause for concern regarding possible genetic damage or any other type of damage. The benefits of the judicious use of x-rays in dentistry far outweigh any possible biological consequences that might be involved.

Anaesthesia Society Formed

The formation of the Society for the Advancement of Anaesthesia in Dentistry has been announced. It is proposed that digest reports on various aspects of anaesthesia will be sent to all associate members. In addition advisory panels are being constituted on anaesthesia and equipment and the services of these panels are at the disposal of all members.

Further information on this society may be obtained from the editor, Dr. B. Blatchley, 53 Wimpole Street, London W.1, England.

CORRESPONDENCE

Licensure Arrangements

To The Editor:

I have read your editorial on licensure agreements and arrangements (December, 1957) with great interest and full approval. Your stand is

well stated, the need is obvious, and I only hope that it is widely read in the United States.

Sincerely,

Austin H. Kutscher, D.D.S., Research Associate, Division of Stomatology, Columbia University, 630 West 168th St., New York 32, N.Y.

IN MEMORIAM

Henry Maxwell Morrow — Dr. Henry Maxwell Morrow of Dundas, Ontario, died on January 14, 1958. He was 76.

He was born at Fenwick, Ontario, in 1881 and received his early education in Fenwick. He matriculated from Trinity College, Toronto, and graduated from the University of Toronto in 1908. He practised in Hamilton for 50 years.

Dr. Morrow was a member of Valley Lodge No. 100 AF and AM and Murton Lodge of Perfection. Dr. Morrow was for some years on the senate of the University of Toronto. He was also a board member of the Royal College of Dental Surgeons of Ontario. He was on the board of directors of the Medical Arts Building and was a past president of the Hamilton Dental Association. Dr. Morrow was made a Fellow of the American College of Dentists about five years ago. He was a member of the session of St. Paul's United Church, Dundas, and also the secretary of the board of trustees of St. Paul's.

Surviving are his wife, Bertha, two sons, Drs. G. M. Morrow and C. B. Morrow, (both dentists), and three daughters, Mrs. W. R. Weir, Mrs. J. H. W. Hutchinson, and Mrs. I. McNairn.

Edward C. Young — Dr. Edward C. Young of Windsor, Ontario, died on February 3, 1958.

He was born at Ennismore, Ontario, and received his early education there. He matriculated from St. Michael's College, Toronto. He graduated from the University of Toronto in 1918. He practised in Toronto from 1918-1919, Walkerville in 1920, and Windsor from 1920 to 1958.

Dr. Young was past-president of the Essex County Dental Society. He was Past Grand Knight of Council 1453 of the Knights of Columbus (third degree) and Past Faithful Navigator of the Dean Wagner General Assembly (fourth degree). Public offices held by Dr. Young were, past member and past chairman Riverside Separate School Board 1932-38; Mayor of Riverside, 1939 and 1940 to 1944. He was a member of the Reserve Dental Corps 1914-1918.

Surviving are his wife, Jessie Kathleen, son, Robert, two daughters, two brothers, five sisters and seven grandchildren.

Franklin Milton Williamson — Dr. Franklin Milton Williamson died on January 26 in North Vancouver Hospital at 72 years of age.

He was born in Roland, Manitoba, and in the year 1916 graduated from the R.C.D.S. He was a captain in the Dental Corps in the First World War and practised in North Vancouver from 1919 to 1947, and in Kelowna until his retirement in 1951 when he moved to North Vancouver.

Dr. Williamson was a member of the Rotary Club, a charter member of the Skeet Club, and an ardent hunter and fisherman.

He is survived by a son, Howard, Vancouver; four daughters, Mrs. R. Thomas and Mrs. William Fownes, both of North Vancouver; Mrs. C. Miller, Twin Falls, Idaho, and Mrs. M. Oswell, Vernon; twelve grandchildren and three great-grandchildren.

Hyman Winkler — Dr. Hyman Winkler of Hamilton, Ontario, died on January 23, 1958.

Dr. Winkler was born in Poland in 1899. He received his early education in Toronto — Wellesley School and Jarvis Collegiate. He graduated from the University of Toronto in 1923 and practised in Toronto from 1923 to 1956, and from 1956 to 1958 in Hamilton.

He is survived by his wife, Marion, one son, Norman, a daughter, Mrs. L. Frankel, and a sister, Mrs. N. Shaul.

Henry McLaughlin Peaker — Dr. Henry McLaughlin Peaker of Ottawa, Ontario, died on December 16, 1957.

He was born at Brampton, Ontario, in 1885 and received his early education there.

He graduated from the University of Toronto in 1909 and practised in Toronto from 1909 to 1919 and in Ottawa from 1919.

Surviving are his wife, Theresa, and a sister, Mrs. N. F. Beardsley, of Ottawa.

Frank Robert Watson — Dr. Frank Robert Watson of Georgetown, died in December, 1957.

He was born at Georgetown in 1877 and received his early education there. He graduated from the University of Toronto in 1899 and practised in Georgetown. Dr. Watson also held the degree of M.D.S., Toronto, 1905.

He was in charge of dental inspection and treatment for local public schools for three years, and also ex chairman of the High School Board of Directors. He was an Honorary Member of the R.C.D.S.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th—8th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	Sept. 4th—7th
1961	Saskatoon, Saskatchewan	June 25th—28th
1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Mar. 20, 1958	Toronto Academy of Dentistry Stated Meeting	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
May 1, 2, 3, 1958	British Columbia Dental Associa- tion Annual Convention	Hotel Vancouver, Vancouver, B.C.	Dr. W. Ross Upton, Exec. Secretary	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 10, 1958	Canadian Society of Dentistry for Children Annual Meeting	Sheraton Brock Hotel, Niagara Falls, Ont.	Dr. W. J. Spence, Secretary	3000 Yonge St., Toronto 12, Ont.
May 18-21, 1958	Convention—Ontario Dental Association	Royal York Hotel, Toronto	Mrs. A. Durham, Secretary	234 St. George St., Toronto 5, Ont.
June 15-19, 1958	Ninth Annual Berkshire Conference in Oral Pathology and Periodontology	Estover in Lennox, Mass.		Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia	Mrs. M. Kolb, Secretary	4001 Spruce St., Phila- delphia 2, Penna., U.S.A.
Aug. 27 to Sept. 4, 1958	46th Annual Meeting International Dental Federation	Brussels, Belgium	Dr. M. Joachim, Secretary	67 Rue de Treves, Bruxelles, Belgium.
Sep. 14, 15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon	500 Albert St., Kingston, Ont.

SHORT GRADUATE COURSES

University of Toronto, Faculty of Dentistry

Dental Oral Surgery and Anaesthesia—April 21-25, 1958—Enrolment Limit 12. Fee \$100. In charge—Dr. J. H. Johnson.

Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

University of Alabama School of Dentistry

Three refresher courses: **Complete Denture Prosthesis**—May 1, 2, 3, 1958

Surgical Anatomy of the Head and Neck (Part I)—May 17, 18, 19, 1958

Etiology and Diagnosis of Pain of Dental Origin (Part II)—May 20, 21, 1958

Removable Orthodontic Appliance Construction—May 24, 25, 26, 1958

Attendance in all courses is limited to 12. For further information write to: Directory, Refresher Course Program, University of Alabama School of Dentistry, 1919 Seventh Ave. South, Birmingham, Alabama, U.S.A.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Stérilisation des cavités

par MAJELLA DION, B.A., D.D.S., Beaupré, P. Qué.

Il faut remonter loin dans l'histoire de l'art dentaire pour en arriver aux premiers efforts en vue d'enrayer la carie dentaire. Les croyances de cette époque et les méthodes employées nous paraissent quelque peu ridicules. Que la carie soit causée par un vers, que la fumigation soit le traitement pour le faire disparaître, ceci nous fait sourire.

Mais malgré les progrès de la science depuis ces temps éloignés, nous n'avons point atteint la solution définitive de ce fléau. Les caries se répandent plus abondantes que jamais. Mais l'art dentaire est maintenant capable de réparer ces ravages. L'utilisation de fraises, ciseaux et curettes nous permettent l'élaboration de formes de cavité bien définies, et l'ablation complète de la carie. Les obturations employées de nos jours résistent mieux et durent plus longtemps. Est-ce que le problème se termine là? Pourquoi trouve-t-on des échecs dans les obturations, des récidives de carie, même sous une obturation?

Doit-on toujours mettre le blâme sur une ablation incomplète de la carie, avant la mise en place de la restauration?

C'est ici que se pose le problème de la stérilisation de la cavité avant son insertion.

Les opinions au sujet de la stérilisation se partagent en plusieurs camps. Durant notre court séjour dans le corps dentaire de l'armée, on nous apprenait qu'après recherches on en était venu à la conclusion que la stérilisation n'était d'aucune utilité, et que la simple toilette de la cavité suffisait. Alors que bien d'autres assurent que l'usage de la digue est suffisant, d'autres encore prônent l'emploi de tel antiseptique, ou de tel germicide.

A qui donner raison, quelle méthode devons-nous adopter? C'est ce que nous voulons discuter, pour en venir à une solution pratique et rapide, car le praticien à son bureau ne peut se permettre d'attendre plusieurs minutes pour laisser agir complètement un antiseptique.

Avant d'aborder ce problème de la

stérilisation, il nous faudrait d'abord rafraîchir brièvement nos connaissances sur la structure de la dent et ses constituants afin de bien comprendre comment se produit la carie, son action, son mode de pénétration.

1—Composition de la dent — structure

Nous savons tous que la dent est composée de trois parties principales, l'émail, la dentine et la pulpe.

Le premier est composé de prismes hexagonaux retenus ensemble par une substance moins calcifiée appelée inter-prismatique. Les prismes sont calcifiés dans l'ordre de 97%.

Dans la couche inférieure de la dent, la dentine, la calcification est encore moindre soit environ 65 à 70%. C'est une substance cimentante, assez semblable à la matière osseuse, présentant une foule de tubuli, contenant chacun une fibre à qui Tômes a donné son nom.

Il semble évident que dans ces tubuli circule une substance formée à partir du flot sanguin dans la pulpe. En effet, les transformations que peut subir la dentine sous une influence quelconque: hypercalcification, dentine secondaire, ne sont pas le fait d'un organe inerte et s'opèrent sans le concours d'aucune substance.

Quant à la pulpe, partie vitale de la dent, on y trouve une fibrille nerveuse, une artériole et veinule. C'est sous l'aver-tissement de cette fibrille nerveuse que s'organise la défense de la dent grâce à la circulation sanguine de la pulpe qui amène les éléments nécessaires aux changements dentinaires.

Sur l'émail, nous rencontrons des déficiences ou des malformations, porte d'entrée de la carie. Parmi les malformations notons les lamelles causées par une mauvaise calcification des bâtonnets d'émail. Parfois les fibres de Tômes se prolongent dans l'émail, causant un manque, c'est ce qu'on appelle un fuseau. Il y a enfin la simple fissure d'émail provenant d'un mauvais processus de calcification.

2—Carie — action — pénétration

Cette maladie infectieuse, causée par les micro-organismes, qui désagrège lentement la structure de la dent, c'est la carie.

Elle s'attaque d'abord à l'émail, en suivant ses bâtonnets. La substance inter-prismatique cède la première, laissant sans soutien les bâtonnets qui céderont bientôt, étant eux-mêmes attaqués.

Une fois l'émail vaincu, la carie s'étend sous le joint énamo-dentinaire pour ensuite continuer sa marche dans la dentine. L'infiltration de salive, transportant des hydrates de carbone et des micro-organismes dans la cavité, y provoque des fermentations. L'acide formé diffuse et sa pénétration est limitée par neutralisation à mesure qu'il se combine avec les matières inorganiques de la dentine. Ce processus prend place en avant des micro-organismes.

L'état pathologique causé est différent de celui de l'émail à cause de la structure plus organique de la dentine et des cellules odontoblastes. Ces dernières ont des réactions cellulaires vitales, à cause de la circulation qui passe dans les canalicules dentinaires.

La carie ira donc plus vite dans ces tissus. Par contre, une réaction de défense s'amorce, calcifiant les canalicules dentinaires. Les odontoblastes protègent la pulpe en formant la dentine secondaire. Mais la carie poursuit toujours son chemin, détruisant les canalicules et leurs parois. La matrice dentinaire est finalement atteinte jusqu'à la pulpe et celle-ci devient exposée.

Tous ces processus nécessitent la présence de micro-organismes au-delà de la décalcification, ou dans son voisinage immédiat.

Selon Appleton, les bactéries pénètrent plus loin que ne l'indiquent les changements structuraux. Quant à Miller, des bactéries en petit nombre peuvent pénétrer dans la dentine sans causer de lésions visibles. Les recherches de Kronfeld et Zander arrivent aux mêmes

conclusions, ayant trouvé des micro-organismes dans les tubuli au-delà de la zone de décalcification.

D'autres encore comme Dorfmann, Stephan et Muntz observent la présence d'une couche partiellement décalcifiée entre dentine saine et cariée, mais pour eux, cette couche est habituellement libre de micro-organismes.

Black ne partage pas la même opinion; il nous déclare que les bactéries ne peuvent pousser dans les tubuli tant que les sels de calcium ne sont pas dissous un peu en avant de la partie lésée.

La théorie de Bartels sur ce sujet nous paraît acceptable. Voici ce qu'il décrit à ce sujet: "Il m'apparaît que les micro-organismes qui se trouvent dans le voisinage immédiat d'une cavité, peuvent produire une quantité suffisante d'acide pour diffuser dans la dentine immédiatement voisine. Mais dans la dentine plus profonde on trouvera moins de bactéries et la quantité d'acide produite sera moindre. Et quelques bactéries peuvent pénétrer dans les tubuli suivant la zone de décalcification. Bevelander évalue le nombre des tubuli entre trente et soixante-quinze mille par millimètre carré, leur diamètre étant de trois à quatre microns à la surface de la pulpe, et d'un micron au joint énamo-dentinaire. On peut penser que, à moins d'être bloqués par la calcification ou des protéines coagulées, ces tubuli sont assez larges pour laisser passer les micro-organismes".

Donc, la plupart des auteurs, sauf Black, semblent unanimes pour établir la poussée possible des bactéries dans les tubuli.

3—Bactéries dans les cavités — humidité — importance de la stérilisation

Il est scientifiquement prouvé que les bactéries pour vivre et proliférer ont besoin d'une certaine humidité. Ainsi les viandes ou les fruits séchés et gardés comme tels ne subissent pas l'atteinte de la putréfaction.

Les micro-organismes demeurant dans

la cavité sous un scellement obturateur se trouvent-ils complètement privés d'humidité?

Il est bien évident que s'il se produit une infiltration de salive le long des bords de l'obturation, nous avons un foyer propice à la récurrence de la carie venant de la présence des micro-organismes dans la salive.

Harshon nous apprend par suite d'analyse que l'humidité de la dentine est très faible; selon lui la partie organique de la dentine contient 8% d'eau à l'état combiné. Ce résultat a-t-il été obtenu sur l'analyse d'une dent fraîchement extraite? De plus, la dentine d'une dent jeune présente à notre avis un plus haut degré d'humidité qu'une dent plus âgée où le processus de calcification est plus avancé et la substance circulante diminuée.

De toute façon, Bartels, se basant sur ce fait, et sur celui qu'il n'y a pas de survie bactérienne sans humidité, nous déclare que les bactéries qui peuvent être introduites dans une cavité sèche ne pourront proliférer si l'obturation est hermétique. (1)

Si cette assertion ne soulevait aucun doute, le problème de la stérilisation des cavités serait clos. En effet, la résection entière de la carie, l'assèchement et une obturation remplissant parfaitement la cavité donneraient des résultats parfaits; car les bactéries présentes dans la cavité lors de l'insertion ne pourraient proliférer faute d'humidité.

Pourtant combien de fois ne vous est-il pas arrivé, pour une raison ou pour une autre, d'enlever une obturation en apparence s'adaptant bien à la cavité et sous laquelle fourmillait la carie?

Faut-il toujours blâmer un prédécesseur d'avoir laissé de la carie?

Mais même dans ce cas, si l'obturation est hermétique, comment se fait-il que ces bactéries aient proliféré? Où ont-elles puisé l'humidité nécessaire?

Ceci ne nous permet-il pas de poser l'hypothèse, que, l'humidité et les élé-

ments nécessaires à la prolifération des bactéries demeurées dans la cavité avant l'obturation viendraient du contenu circulant dans les canalicules de la dentine.

La carie demeurerait d'origine externe, les micro-organismes présents sous l'obturation viendraient de l'extérieur, mais leur développement serait favorisé par des éléments de source interne.

Cette prolifération se fait lentement, car le système naturel de défense de la dent demeure toujours en jeu; calcification plus forte, dentine secondaire.

Nous aurions acquis un autre argument en faveur de notre hypothèse, si on remarquait la diminution ou l'absence de progression des caries sous les obturations faites chez des patients d'un certain âge. Après une certaine période, je dirais l'adolescence, certaines modifications apparaissent dans la structure de la dent: retrait de la pulpe, hypercalcification des tubuli dentinaires, formation de dentine secondaire.

Ces changements établiraient une barrière, non pas tant à la pénétration des bactéries (qui peuvent percer une calcification beaucoup plus forte: l'émail) mais bien à cette circulation dans la dentine des éléments venant de l'intérieur et favorisant le développement de ces bactéries sous une obturation. Alors ces dernières privées de leur apport de nutrition et d'humidité se nécroseront.

Ces modifications de la dent, avec l'âge, entravent certainement la pénétration des bactéries et ainsi l'incidence de carie chez les gens plus âgés. Mais ce n'est pas un mur impénétrable par la carie.

Cette augmentation de calcification de la dentine venue avec un âge plus avancé diminue aussi la perméabilité de celle-ci vis-à-vis tout germicide, affaiblissant ainsi sa capacité de diffusion et son action. C'est une protection pour la pulpe contre les irritations.

Alors si notre hypothèse a quelque chance d'être viable, elle nous amène à conclure de l'obligation de stériliser toute

cavité, sauf peut-être dans le cas de caries superficielles. En effet, si les bactéries sous une obturation sont favorisées par le contenu de la dentine, il faut les éliminer complètement avec un germicide énergique à action assez longue, avant de poser l'obturation.

4—Usage de la digue et stérilisation

La stérilisation des cavités est-elle indispensable si l'on opère avec la digue?

Se basant sur les constatations citées plus haut, et sur les quelques cultures prises dans des cavités, où la digue était en place, il y avait eu excision complète de la carie mais aucune stérilisation, nous sommes forcés de ne pas endosser complètement les opinions de Black et Bartels. Le premier insistant que s'il n'y a eu aucune fuite autour de la digue, ni aucune apparence d'humidité nulle part, on doit faire l'obturation aussitôt.

Quant au dernier, sûr de l'expérience clinique, il prétend que la résection mécanique de la dentine cariée et d'une faible couche dure au-delà de la cavité suivie de l'installation d'une restauration hermétique assure à la dent une longue survie. Celui-ci met implicitement une restriction dans son énoncé: et d'une faible couche dure au-delà de la cavité.

Si vraiment nous sommes en face d'une cavité où la carie n'est que du premier degré ou superficielle du deuxième degré, alors que la digue est en place, la stérilisation nous semble moins indispensable. Pourvu que la forme de cavité ne se borne pas à une simple ouverture dans la carie au moyen d'une fraise (car celle-ci contaminerait toute la cavité) sans compter l'étendue de la carie au joint énamo-dentinaire qui peut ne pas être nettoyée.

Mais si la cavité dépasse les limites de la carie, la fraise qui est venue en contact avec la lésion carieuse, subit un nettoyage mécanique énergique, par fraissage dans la structure saine, éloignant ainsi le danger de contamination.

D'un autre côté, si la carie a progressé

jusqu'à la profondeur moyenne d'une cavité normale, ou plus profondément encore, nous préconisons toujours la stérilisation après ablation complète de la carie, car alors la cavité se trouve contaminée par les fraises et curettes ayant servies à enlever la carie. Sans compter les bactéries qui ont pû pénétrer dans les tubuli sans causer encore de lésion apparente.

5—Possibilité de stérilisation des cavités avec médicaments

Un grand nombre d'antiseptiques existent de nos jours. Nous citons le chlore, l'iode et leurs différents composés métalliques, tels que le chlorure de zinc, le sulfate de cuivre, le nitrate d'argent, le phénol, l'alcool. Les plus communément employés sont le phénol, le nitrate d'argent et l'alcool.

Leur valeur varie selon leur différentes caractéristiques et qualités. Leur efficacité dépend souvent du milieu où ils sont employés, de leur concentration. Aussi, il faut un certain degré d'humidité du milieu environnant pour que le germicide puisse agir.

A—Efficacité du phénol

D'après Bartels, cette faible humidité de la dentine s'oppose à toute dispersion du phénol. Selon lui, le phénol tel que nous l'employons sous forme concentrée en badigeonnage dans une dent sèche est proprement inefficace, ou peut, dans la meilleure hypothèse, donner seulement une stérilisation de surface.

De plus, d'après Miller, l'action du phénol semble très lente, car après expérience il avait trouvé qu'il fallait quarante-cinq minutes au phénol pour stériliser un millimètre de dentine. Quant à Barker, ayant pris des cubes de dentines exposés à l'action du phénol il déclare qu'il faut de trente à soixante minutes pour en détruire les micro-organismes.

Dorfmann, Stephan et Muntz rapportent que le phénol liquide s'est montré

incapable de détruire certains micro-organismes dans la dentine au bout de trente minutes.

Bartels et Hardwick, établissant des statistiques sur la valeur comparative de trente agents bactéricides employés pour la stérilisation des cavités, classent vingt-neuvième le phénol avec le coefficient quinze.

Thomas, de son côté, fait remarquer, qu'employé improprement, le phénol peut pénétrer la structure de la dent et éveiller des réactions inflammatoires dans la pulpe.

Malgré tous ces faits, le phénol semble l'agent chimique le plus couramment employé pour la stérilisation des cavités.

Tout de même, un point reste à noter au sujet du phénol. Il est communément admis qu'il coagule la matière protéinique de la dentine, scellant ainsi les tubuli et s'opposant en même temps à sa pénétration. Les tubuli ainsi scellés peuvent renfermer des micro-organismes n'ayant pas subi l'effet du germicide. Est-ce que cet emprisonnement des bactéries par l'action du phénol empêcherait toute prolifération de ces agents microbiens? D'après nos déductions du présent ouvrage, tout laisse croire qu'il y aura dégénérescence lente de la dentine par la récurrence de la carie, si la dent est assez jeune pour contenir l'humidité indispensable.

Quant à nous, en compagnie de notre confrère, M. Paul-Emile Bélisle, nous avons dressé quelques modestes expériences avec le concours du service d'endodontie.

Tout d'abord quelques prises de cultures dans des cavités n'ayant été traitées d'aucune façon. Le résultat était attendu: présence de micro-organismes. Comment peut-il en être autrement alors que les fraises, curettes et ciseaux sont contaminés par le contact de la zone infectée.

Dans quelques autres cavités ayant subies l'application du phénol, alors que la digue était en place, nous avons pris une culture, ayant attendu que la cavité semble sèche. Les résultats ne furent pas

constants, quoique, dans un bon pourcentage, nous avons obtenu des cultures négatives. Cette stérilisation ne serait que superficielle selon tous les auteurs.

Nos expériences valent ce qu'elles valent, et nous n'en déduisons pas des conclusions péremptoires. Car il nous aurait fallu garder ces dents sous observation pendant plusieurs mois, même pendant des années, ayant tenu un record de toutes nos opérations, du médicament employé, de notre technique. Il nous aurait fallu compiler des statistiques comparatives. C'était impossible pour nous.

Que penser maintenant de l'application d'alcool après le phénol dans la cavité?

On nous a toujours laissés sous l'impression que nous devons neutraliser le phénol par de l'alcool, quand la cavité était un peu trop profonde.

Des travaux datant de 1897 de Kings et Paul soutenaient cette thèse. Mais des travaux plus récents menés par McCulloch renversent cette théorie, allant même jusqu'à affirmer que l'alcool éthylique peut même augmenter l'efficacité du phénol. Quant à Bartels, l'alcool ne porterait aucun préjudice au phénol.

Tout de même, l'alcool éthylique est l'antidote employé dans l'empoisonnement par absorption de phénol. Mais l'alcool ne semble pas agir comme neutralisant, car son ingestion doit être suivie d'un lavage stomacal sinon l'alcool favoriserait l'absorption du phénol.

Le phénol ne semble donc pas nous satisfaire complètement pour une bonne stérilisation de cavité dentaire. Tout au plus devrions-nous l'employer dans les cavités où seulement une stérilisation superficielle est nécessaire; ainsi dans les cas où la cavité dépasse les limites de la carie.

B—*Le nitrate d'argent*

Expérimentalement, la solution aqueuse d'AgNO₃ et le AgNO₃ ammoniacal sont les plus effectifs contre micro-organismes de la dentine cariée. D'après Dorfmann, Stephan et Muntz, la solution

aqueuse saturée d'AgNO₃ stérilise la dentine cariée à une profondeur de 0.3 mm. en une minute, de 0.7 en deux minutes et de 1.3 en dix minutes.

Dans son étude comparative portant sur trente agents chimiques de stérilisation, Hardwick attribue au AgNO₃, en tant que bactéricide, le coefficient 74 ce qui est supérieur à tout autre, et en comparaison de 15 comme coefficient pour le phénol qui se classe vingt-neuvième.

Bartels a compilé à peu près les mêmes résultats.

Selon Barker, seul AgNO₃ est capable de stériliser la dentine dans un court espace de temps, soit environ cinq minutes.

Le produit final de l'application de AgNO₃ dans la dentine cariée est probablement un mélange de protéinate d'argent et d'argent réduit, dû à l'action de la lumière, et d'agents réducteurs. Pour hâter la réduction du sel d'argent, on emploie le complexe argent-ammoniacal.

Le AgNO₃ peut être réduit en argent métallique par une foule de substances dont le plus commun est l'eugénol ou une solution de formaldéhyde à 10%.

Il est reconnu que l'AgNO₃ ammoniacal est moins toxique que l'AgNO₃ per se.

Mais selon Manley et Hardwick, parmi les germicides employés dans la stérilisation des cavités, l'AgNO₃, s'il n'est pas employé sous forme ammoniacale, mais en solution aqueuse, fournit la plus grande marge de sécurité en ce qui regarde l'irritation de la pulpe. Leurs expériences ont été menées tout en tenant compte de l'éloignement de la pulpe et de la formation ou non de la dentine secondaire.

La valeur prédominante de l'AgNO₃ pour la stérilisation des cavités vient de sa propriété à diffuser dans la dentine. Les fines particules d'argent, qui sont ainsi distribuées dans la dentine cariée peut retarder les progrès de la lésion. En effet, les propriétés oligodynamiques de l'argent joue un rôle bactériostatique.

Comment peut-il en être ainsi si la dentine est privée d'humidité, comme le prétend Bartels, alors que tout métal requiert la présence de celle-ci pour exercer ses propriétés oligodynamiques, comme le soutient encore Bartels; et l'efficacité clinique de l'AgNO₃ n'est plus à prouver.

Donc ceci s'ajoute en faveur de notre hypothèse du début, voulant que la substance circulante dans la dentine contienne l'humidité nécessaire et pour l'action oligodynamique de l'argent et pour la prolifération des bactéries.

L'insolubilité de ces fines particules d'argent dans les éléments circulatoires de la dentine, et la grande tolérance des tissus dentaires envers cet antiseptique, en font un agent indispensable dans la stérilisation des cavités profondes où l'ablation complète de la carie est douteuse.

Tout ces avantages ne sont pas sans être accompagnés d'un désavantage, celui de décolorer la dent. Son emploi se trouve donc confiné aux dents postérieures. Cependant, il peut être employé d'une façon satisfaisante sur les dents antérieures en prenant les précautions nécessaires et en se servant d'un applicateur spécial, afin d'éviter toute tâche sur les parties visibles de ces dents.

C—L'alcool

Que penser maintenant du lavage des cavités par l'alcool?

Bartels, s'appuyant sur vingt ans de pratique, prône son usage pour la toilette des cavités. Nous admettons avec lui l'importance de la toilette de la cavité avant la mise en place de la restauration. L'alcool est peut-être l'agent le plus approprié pour un bon nettoyage de la cavité. Il pourrait suffire comme l'emploi du phénol dans les cavités ou la carie n'était que superficielle. Car l'alcool à 95% comme en fait usage Bartels est d'une faible valeur antiseptique. De plus, son évaporation rapide sous un souffle d'air provoque un refroidissement pouvant causer une vive douleur à la pulpe si la cavité est profonde.

Aussi n'approuvons-nous pas l'usage de l'alcool dans les cavités profondes à moins que l'alcool soit appliqué chaud et suivi d'un jet d'air chaud; et dans ce dernier cas, ceci suffit seulement à la toilette et non à la stérilisation des cavités.

Dans le cas de cavités profondes, Bartels après application d'alcool et séchage, applique une couche d'oxyde de zinc-eugénol et obture à une séance suivante. L'oxyde de zinc-eugénol étant antiseptique en même temps qu'analgésique, un tel emploi peut donner de bons résultats pourvu que la couche d'oxyde de zinc laissée en place soit mince et recouverte d'une reconstitution oxyphosphate pour assurer la stabilité de l'obturation.

6—Propriétés oligodynamiques et bactériostatiques des matériaux à obturation

Encore ici, l'humidité semble indispensable, car ni l'or ni l'amalgame d'argent n'exerce d'action en milieu sec. Quant à l'incrustation, étant cimentée, elle ne se trouve pas en contact intime avec la dentine. Pour l'aurification, il est très recommandable de faire précéder son insertion d'une mince couche de vernis protecteur dans le fond de la cavité, comme isolant. Ce qui enlève le contact direct de l'obturation avec l'humidité présente dans la dentine, et avec les bactéries potentiellement présentes dans la cavité.

Quant à l'amalgame, nous pouvons douter de son efficacité comme action bactériostatique par les nombreuses récurrences de caries enfermées sous cette obturation. De toute façon, son action doit se limiter au contact direct.

Pour leur part, les ciments possèdent quelques qualités bactéricides grâce à l'acide phosphorique. Mais comme leur consistance doit être plutôt ferme, sans surplus de liquide, leur action serait très faible et de très courte durée, c'est-à-dire jusqu'à la prise. Nous ne pouvons pas compter là-dessus pour stériliser une cavité.

Est-il besoin de dresser le plaidoyer de

la porcelaine synthétique? Nous connaissons tous son manque de résistance à l'abrasion et à l'attrition, sa friabilité permettant l'infiltration de nouveaux micro-organismes.

7—*Exposition et coiffage de pulpe*

Plusieurs des auteurs que nous avons consultés se sont prononcés contre le risque d'exposer la pulpe en voulant opérer une extirpation complète de la carie. Parmi eux, nous comptons Dorfmann, Kraus, Muntz et Stephan. Dire que l'on peut conserver une pulpe exposée par un coiffage adéquat, dire que l'on parvient à favoriser l'obturation naturelle d'une brèche pulpaire, est maintenant bien admis, alors que cela était encore très controversé il y a deux ou trois ans.

Quant à nous, nous appuyant sur l'enseignement reçu et sur les faits cliniques accumulés par le docteur J. A. Renaud, de l'Université de Montréal, nous prenons position en faveur d'une excision totale de la dentine cariée. Des considérations nombreuses établissent très fréquemment l'impossibilité ou le danger de garder de la dentine ramollie stérilisée ou non devant servir de protection pulpaire.

Sur plus de cinq cents cas d'exposition de pulpe par les élèves, le docteur Renaud a obtenu les résultats les plus prometteurs en développant une technique personnelle, s'inspirant de travaux menés par les docteurs Bernard et Macler. Tenant compte de la maladresse ou de la mauvaise technique avec laquelle les expositions ont pu être faites, nous pouvons être très enthousiasmés devant un si forte pourcentage de guérison.

CONCLUSION

De cette étude du problème de la stérilisation des cavités en pratique dentaire, une idée principale jaillit, celle de l'importance dans tous les cas d'une stérilisation efficace de la cavité.

Nous pourrions excepter, comme nous l'avons expliqué précédemment, dans le

cas de carie superficielle. Mais là encore pourquoi ne pas développer cette habitude d'éviter tout à peu près. Dans ce cas-ci où la cavité dépasse les limites de la carie, une stérilisation au phénol précédée d'une bonne toilette de la cavité soit au H_2O_2 , soit à l'alcool chaud pour éviter le refroidissement rapide, nous paraît suffisant.

Dans le cas d'exposition de pulpe, le docteur Renaud n'applique aucun germicide, à cause du danger d'irriter la pulpe. Mais après l'ablation totale de dentine cariée ou ramollie, il lave avec l'eau oxygénée boratée suivie d'une aseptie au moyen d'une boulette de coton imbibée d'alcool et flambée, suivi d'assèchement à l'air chaud. Cette pratique est tout à fait justifiée, car l'alcool employé de cette façon n'irrite pas la pulpe en plus de ne pas diffuser dans les canalicules. Mais dans tous les autres cas entre ces deux extrémités, nous prenons position pour l'usage du $AgNO_3$ en solution aqueuse. C'est le germicide le plus efficace et dont l'action se prolonge par ses fines particules d'argent précipitées dans les tubuli. De plus, c'est le médicament le mieux toléré par les tissus dentaires. Sa diffusion dans les canalicules étant assez rapide, il faudra tout de même juger de la profondeur de la cavité, de l'éloignement de la pulpe, pour le précipiter au moyen d'eugénol dans la limite de temps requis à la stérilisation, sans danger pour la pulpe.

BIBLIOGRAPHIE

1. Bartels, Henry A. — "Information dentaire", 15 fév. 1951.
2. Dorfmann, Stephan and Muntz — "American dental Journal Association, décembre 1943.
"In vitro studies on sterilization of carious dentine".
a) Evaluation of germicides
b) Extend of infection of carious lesion
c) Effective penetration of germicide into carious lesion.
3. Miller, W. D. — "What Antiseptic should be used for Sterilizing cavity before filling", Dental Cosmos, mai 1891.
4. Baker — "Silver Nitrate in Cavity Preparation", Dental Survey, avril 1936.
5. Seltzer, S. — "Comparative Value of Various Medications in Cavity Sterilization", American Dental Ass., Nov. 1941.
6. Accepted Dental Remedies, édition 1950.
7. Macler, M. — "De la conservation de pulpes même pathologiques", revue odontologique, mars 1951.
8. Renaud, J. Arthur — "Nouveau coiffage de pulpe avec l'hydroxyde de calcium et le sulfamide septoplex", Canadian Dental Association Journal, février 1952.

Nouvelles de l'Association

La Colombie britannique reconnaît le certificat du Bureau national d'Examen dentaire

On vient d'apprendre qu'à son assemblée de novembre 1957, le Conseil du Collège des Chirurgiens-Dentistes de la Colombie britannique a adopté la résolution suivante:

"Il est résolu que le Collège des Chirurgiens-Dentistes de la Colombie britannique admette comme membres les détenteurs de Certificats du Bureau national d'Examen dentaire sans autre examen, à condition qu'ils commencent à exercer en Colombie britannique en dedans de dix ans après avoir terminé leurs études dentales."

Cette décision veut dire que les détenteurs d'un certificat du Bureau national d'Examen dentaire (en dedans de dix ans après avoir terminé leurs études) pourront obtenir une licence pour exercer dans cette province sans avoir à subir d'examens cliniques, comme la chose se faisait dans le passé.

Il faut féliciter le Conseil de la Colombie britannique d'avoir facilité la procédure pour pouvoir exercer dans cette province, en reconnaissant le Certificat du B.N.E.D. Cette attitude de sa part renforcit l'influence du Bureau national d'Examen dentaire et marque une avance considérable pour la profession.

Les Sénateurs parlent d'Assurance-Santé

Le 27 novembre dernier, l'Honorable Joseph A. Sullivan, M.D., sénateur pour la division York, Ontario, a parlé longuement de cette question, au Sénat. En réponse, le Sénateur David Croll, de Toronto-Spadina, a déclaré: "La bataille contre l'assurance-santé est perdue d'avance. A mon avis, vous feriez mieux de cesser de vous y opposer et de joindre nos rangs."

Les trois premières phases projetées par le gouvernement fédéral précédent et regardées comme sur le point de se réaliser sont l'hospitalisation, les traitements médicaux et les soins dentaires. Nous citons les paroles du Sénateur Sullivan, parce qu'elles traitent du sort réservé à la dentisterie dans l'ensemble de l'assurance-santé.

Sén. Sullivan:

"La profession médicale tout entière, inspirée de la même idée, s'écrie: "Arrêtez" . . . Ce problème est du seul ressort de la profession médicale. Certes, nous demandons de l'aide . . . mais nous ne voulons pas qu'on contrôle et qu'on administre la profession! La règle de conduite des médecins est l'excellence et certaines personnes ambitieuses voudraient y sub-

stituer l'égalité, sous le contrôle de l'Etat. L'abolition d'un système obligatoire de maladie, une fois qu'il aura fonctionné un certain temps, même s'il fonctionne à perte et même s'il ne répond pas aux besoins, ne peut être imaginée! . . . Tous les partisans de la coercition peuvent sincèrement promettre que tous les citoyens auront droit aux traitements . . . mais ces traitements seront nécessairement de qualité inférieure pour la plupart des citoyens.

Les bénéficiaires recevront en groupe, de la main gauche, ce que donnera leur main droite . . . Le public s' imagine bien à tort qu'il peut recevoir quelque chose gratuitement du gouvernement.

Si on juge qu'il faut faire davantage dans le domaine de la santé publique, il faudrait songer plutôt à un plan de grande envergure pour sauvegarder, toute la population dans un cas de cataclysme ou d'urgence nationale. Ce plan comporterait les services médicaux et dentaires. Je crois fermement que le gouvernement fédéral devrait aider de ses subsides seuls ces endroits où l'individu est incapable de se donner le nécessaire, les indigents, les vieillards, les malades chroniques et ceux qui doivent déboursier pour remédier aux conséquences d'un séisme ou d'une catastrophe."

Il est intéressant de noter que, dans sa réponse, le sénateur Croll a mentionné ce que pensent plusieurs personnes: "On ne peut savoir exactement ce qu'il en coûtera. . . . La meilleure façon de le savoir est de mettre en marche le programme et de faire face à la musique."

Opinion du membre de la Législature du Manitoba sur la question d'assurance-santé

Dans un article de journal, le député C.C.F. du comté de Dauphin, Manitoba, M. F. S. Zaplitny, exposait récemment les vues de son parti sur cette question importante.

"Mes collègues du parti C.C.F. et moi-même avons l'intention de préconiser la mise éventuelle d'un plan de santé complet pour tous les citoyens canadiens, non seulement pour l'hospitalisation, mais aussi pour les traitements médicaux, dentaires et optiques . . . Nous désirons que ce plan commence aussitôt que possible, au moins dans sa phase d'hospitalisation, de façon à ce qu'on puisse organiser pour l'avenir un Plan de Santé nationale."

Vancouver adopte fluoruration

Par une grosse majorité, les citoyens de Vancouver ont décidé de fluorurer leur eau de consommation. Malheureusement, ce

vote n'entraînera pas immédiatement la mise en oeuvre de cette mesure, parce que la ville de Vancouver est une des 14 composantes de la région métropolitaine qui reçoit son eau du Greater Vancouver Water Board. Il faut pour cela que les autres municipalités fassent de même et, à date, aucune d'elles n'a signifié son intention de tenir un plébiscite sur la question.

Tous les partisans de la fluoruration se sont réjouis de ce vote. Il y a à peine un an, le Conseil municipal de Vancouver avait rejeté la tenue d'un plébiscite.

La fluoruration est sans danger (Association médicale américaine)

Le Bureau des Délégués de l'Association médicale américaine a, encore une fois, comme il le faisait en 1951, donné son opinion sur la fluoruration, en déclarant que cette mesure est sans danger et qu'elle contribue à réduire la carie dentaire. Cette déclaration a été faite à Philadelphie, au cours de la 11e séance clinique annuelle de cette Association, après que le Conseil des Drogues et des Aliments eut terminé une "nouvelle enquête approfondie" sur la question.

L'Association médicale américaine ajoute que cette nouvelle enquête et ses résultats, quoique plus élaborés, fournissent les mêmes données que celles contenues dans le rapport de décembre 1951 de ce Conseil.

Depuis cette date, il y eut plusieurs enquêtes, plusieurs statistiques furent compilées et un grand nombre d'opinions furent exprimées.

Comprimés de fluor pour les femmes enceintes de Hamilton

Le Service de Santé de Hamilton a approuvé un plan par lequel les femmes enceintes recevront des comprimés de fluor dans les cliniques de la ville.

Approbation des Rayons-X

Le Conseil des recherches dentaires de l'Association dentaire américaine a réaffirmé son opinion que les patients n'ont aucune raison de s'alarmer lorsqu'ils subissent des examens aux Rayons-X de leurs dents et de leurs maxillaires.

Le Conseil rapporte que des millions d'examens aux Rayons-X n'ont jamais causé d'ennuis à qui que ce soit. Et des expériences ont récemment prouvé que les dentistes peuvent maintenant radiographier les dents avec moins de radiation, en filtrant convenablement les rayons centraux avec un diaphragme en plomb et un utilisant des films ultra-rapides, un kilovoltage plus élevé et en développant les films plus longtemps.

Congrès annuel de la Fédération Dentaire Internationale

Voici un bref résumé du 45e Congrès annuel de la Fédération Dentaire Internationale, qui a eu lieu à Rome en septembre 1957.

Environ 7,500 personnes se sont inscrites au 12e Congrès Dentaire International et à peu près 2,000 ont pris part à l'exposition industrielle, présentée de la façon la plus artistique et qui groupait 216 compagnies venant de 14 pays différents.

Au cours de l'inauguration officielle du Congrès, le samedi 7 septembre, le Secrétaire Général du Congrès, le Docteur P. Lalli, fit l'appel de 72 pays qui y étaient représentés.

Le travail accompli par l'Assemblée Générale, le Conseil, les Commissions, les Comités, et les résolutions adoptées peuvent se résumer sous les titres suivants:

- A. Régie interne
- B. Relations extérieures
- C. Commissions et Comités
- D. Journal Dentaire International
- E. Prix internationaux

A la deuxième réunion de l'Assemblée Générale, le Docteur Th. Brandrup-Wognsen (Suède) a été élu à l'unanimité président de la Fédération. C'est la première fois qu'un scandinave accède à ce poste.

L'Assemblée Générale a approuvé, en y faisant une addition, la seconde rédaction des "Principes internationaux d'éthique pour la profession dentaire".

Les prochaines réunions auront lieu aux endroits suivants:

- 1958—Bruxelles, du 27 août au 2 septembre
- 1959—New York, cette réunion coïncidera avec le centenaire de la fondation de l'A.D.A.
- 1960—Madrid, au début de septembre
- 1961—aucune invitation reçue
- 1962—Cologne, Allemagne (13e Congrès international)

Les pays suivants ont été admis comme membres actifs de la F.D.I.:

- Association dentaire de toutes les Indes (autrefois membre correspondant)
- Ordre du Corps dentaire du Liban
- Asociacion Odontologica Uruguayana
- Hong Kong Dental Society
- Bulgarian Scientific Stomatological Society

La Fédération compte maintenant 54 membres actifs et 5 membres correspondants, représentant 43 pays.

Membres de soutien

Le 30 août 1957, la Fédération avait 4405 membres de soutien et, de ce nombre, 602

étaient de nouveaux membres depuis décembre 1956.

L'Assemblée générale a approuvé une augmentation pour la cotisation des membres de soutien; c'est la première augmentation depuis 1907. Pour devenir membre de soutien et pour être abonné au Journal Dentaire International, il en coûte aux Canadiens la somme de \$15.00.

A la réunion des trésoriers nationaux, on a surtout souligné les points suivants:

- l'importance d'augmenter le nombre des abonnés à l'édition de langue anglaise du Journal pour que les profits de cette édition aident éventuellement à financer sa publication dans d'autres langues.

- l'obligation morale de devenir membre de la F.D.I., sans songer aux avantages que donne la cotisation.

- la recherche de motifs pour accroître le nombre des membres de soutien, pendant que le congrès de Rome est encore frais dans la mémoire de ceux qui y ont assisté.

Les trésoriers nationaux ont demandé de songer à organiser une réunion ou une réception sociale, au cours des assemblées annuelles de la F.D.I., spécialement pour les membres de soutien et leur famille. Ce serait fournir à ceux-ci une occasion de se connaître et d'augmenter les avantages que leur donne leur adhésion.

Membres de soutien de la F.D.I. pour 1958

Le travail de la Fédération Dentaire Internationale dépend en grande partie du nombre de ses membres de soutien. Au récent congrès de Rome, les représentants des membres constituants ont promis d'augmenter le nombre des membres dans chaque pays.

On se rend de plus en plus compte de l'importance des échanges de la dentisterie au niveau international, et des ressources pécuniaires solides sont indispensables pour que notre profession occupe le rang qui lui convient. Tous les organismes dentaires importants du monde considèrent maintenant la F.D.I. comme l'agence officielle de la dentisterie dans le domaine international.

La cotisation annuelle de membre de soutien a été élevée à \$15.00 et celle-ci comprend l'abonnement au Journal de la F.D.I. Cette augmentation a été rendue nécessaire par l'accumulation des responsabilités dont on a chargé la F.D.I.

En 1957, le Canada n'avait que 31 membres de soutien et ce chiffre est petit si on le compare à celui d'autres pays. On considère que l'abonnement au Journal vaut à lui seul le prix de la souscription.

Pour cette cotisation, on s'adresse au Dr Don W. Gullett, 234 rue St. Georges,

Toronto; c'est le trésorier national pour la F.D.I.

Notes sur l'organisation de la dentisterie en Finlande

Population: 4,200,000

Nombre de dentistes: 1500 (dont 80% sont des femmes, soit 1200)

Nombre de dentistes en rapport avec la population: 1/2800

Service dentaire des écoles

La Finlande n'a pas de service dentaire public similaire à ceux qui existent en Norvège ou en Suède. Les traitements dentaires à tous les écoliers sont gratuits. Environ 20% de ces traitements se donnent dans des cliniques et 80% dans des cabinets particuliers. Quelques dentistes, pas plus de cinquante, travaillent à salaire à temps complet. Il est de tradition chez les dentistes finlandais de ne pas accepter une situation à temps complet et à salaire, excepté quand la situation elle-même l'exige. La profession dentaire préfère l'exercice privé et veut à tout prix garder son indépendance. Dans tout plan de santé, les dentistes n'acceptent, pour se protéger, que des situations à temps partiel (3 heures par jour).

Les cliniques dentaires des écoles sont organisées de la façon conventionnelle une clinique centrale où sont logés l'administration, les services spécialisés d'orthodontie et de chirurgie buccale et d'autres cliniques à part pour la dentisterie opératoire. Celui qui visite ces cliniques se rend compte qu'on accorde beaucoup d'importance à l'exercice privé. Les dentistes qui traitent les écoliers dans leur cabinet particulier sont rémunérés d'après une liste d'honoraires fixée, pour chaque genre de traitement.

Les enfants de 7 à 14 ou 16 ans ont droit à ces services gratuits. Les seuls traitements prodigués à la denture primaire sont pour soulager la douleur. On dit que la profession ne peut donner les traitements nécessaires à l'entretien des dents primaires, pour cette raison, qu'il vaut mieux qu'elle consacre tout son temps, si nécessaire, à la conservation de la denture permanente.

La proportion du nombre des dentistes en regard de la population n'a pas la même répercussion qu'ailleurs en Finlande, parce que 80% des dentistes sont des femmes. Presque toutes sont mariées. Le gros du travail est fait par des célibataires et des veuves, celles-ci devant absolument gagner. Le travail accompli par des femmes mariées n'est pas régulier et c'est pourquoi, en Finlande, le rapport dentistes-population n'a pas la même signification que dans les autres pays où les dentistes, en général, doivent gagner de l'argent.

Il n'y a pas de cours pour le personnel auxiliaire; les techniciens exécutent la plus grande partie de leur travail dans des laboratoires.

Enseignement dentaire

Il y a une faculté dentaire, située à Helsinki, et on la nomme l'Institut de Dentisterie. L'édifice qui l'abrite est solide et contient cinq étages d'une superficie égale à nos plus grandes facultés dentaires. Il a été construit en 1932. Cependant, on le considère trop petit et trop vieux et on se propose de construire une nouvelle bâtisse plus grande et plus moderne dans deux ans environ. L'Université est à démolir les édifices actuels et à les remplacer par de nouveaux; ceux qui sont terminés sont d'un style très moderne et très beau. L'équipement de la faculté dentaire est convenable, mais plutôt ancien. On se propose de doter le nouvel édifice de l'équipement le plus moderne.

L'école fait partie de la faculté de médecine de l'Université de Helsinki; son administration financière est sous le contrôle de l'Université qui est subventionnée par l'Etat. L'enseignement universitaire est gratuit et il n'y a pas de frais de scolarité. Les étudiants versent de légers honoraires pour leurs menues dépenses et achètent quelques petits instruments.

Les conditions d'admission sont sévères et se comparent difficilement avec celles qui existent au Canada. Le Collège dure huit ans (de 10 à 18 ans environ) et renferme une ou deux années de matières universitaires, selon les programmes en vigueur sur ce continent.

Le candidat aux études médicales ou dentaires doit subir un examen d'admission portant sur la biologie, la physique et la chimie. Pour préparer cet examen, l'Université offre ce qu'on appelle un Cours de Sélection, qui consiste en six semaines de leçons sur les sujets sus-mentionnés. C'est la faculté de médecine elle-même qui choisit les candidats admis parmi ceux qui réussissent à l'examen. La faculté de Helsinki peut recevoir 30 élèves par classe.

Durant la première année, le cours dentaire comprend des leçons théoriques et pratiques de biologie, de physique et de chimie. En deuxième année, les élèves font leur anatomie, leur histologie et leur physiologie. Ces cours sont communs pour les élèves de médecine et de chirurgie dentaire. Après avoir complété avec succès ces deux années, les étudiants dentaires reçoivent le titre de Candidat en Odontologie.

Ensuite, les étudiants sont admis à la faculté dentaire où, durant trois ans, ils complètent leurs études. Le curriculum est bien chargé et les journées scolaires sont

longues (de 8 heures a.m. à 7 heures p.m.). En première année, on leur donne des cours en pathologie générale, en pharmacologie, en bactériologie, en sérologie, en médecine interne, en orthopédie dentaire et en matériaux dentaires. De plus, les élèves ont des cours et des séances de laboratoire en dentisterie opératoire et en prothèse.

Le reste du cours comprend des leçons théoriques et des séances cliniques en dentisterie opératoire, en chirurgie, en prothèse, en orthopédie dentaire et en péodontie. En tout, les étudiants prennent en moyenne 5 ans et demi pour faire leur cours.

Après ses études, l'étudiant a droit au titre de licencié en odontologie (Lic. Odont.). En continuant des études post-universitaires, les futurs dentistes peuvent obtenir leur doctorat en odontologie (Dr. Odont.). Pour obtenir un poste de professeur, ce titre est obligatoire. Cette faculté réalise des travaux de recherche considérables, car elle constitue le centre des recherches dentaires de Finlande.

Nombre des étudiants en chirurgie dentaire

On vient de compiler les chiffres des étudiants en chirurgie dentaire au Canada pour l'année académique 1957-58. Ces statistiques annuelles révèlent des fait intéressants, dont les plus importants sont ceux-ci:

Inscription: Quoique l'augmentation soit minime, le nombre des étudiants est le plus considérable depuis 1950-51.

Etudiants diplômés: Le nombre de ces étudiants est à son plus bas niveau depuis plusieurs années.

Hygiénistes dentaires: Il n'y a malheureusement qu'une petite école pour ce genre d'étudiantes. Le nouvel édifice qu'est à construire Toronto permettra d'accepter un plus grand nombre d'élèves, mais d'autres écoles devraient être fondées ailleurs.

Finissants: Le nombre total des nouveaux diplômés pour 1957 a été de 186. Ce nombre n'améliore pas la proportion des dentistes en regard de la population du Canada.

Provinces de l'Est: 514 ou environ 65% des étudiants viennent de l'Ontario ou de Québec. Ces deux provinces renferment 62.8% de la population du Canada.

Etats-Unis: 44 étudiants canadiens fréquentent des facultés dentaires américaines. 20 de ces étudiants viennent de la Colombie britannique. En retour, il y a 49 étudiants américains inscrits dans des facultés canadiennes.

Coût des études: Pour la première fois, le coût des études dentaires est compilé dans le tableau No. 10.

Qualifications spéciales: Il y a 33 étudiants qui ont des qualifications spéciales; 21 de ceux-ci étudient à Toronto.

Demandes d'admission: Selon les renseignements obtenus, les demandes d'admission ont été moins nombreuses cette année qu'au cours des années passées. On croit qu'il serait souhaitable que tous les membres de la profession aident au recrutement.

TABEAU no 1
Inscription—Année académique, 1957-1958

	ETUDIANTS ORDINAIRES						AUTRES				
	1ère année	2ème année	3ème année	4ème année	Hommes	Femmes	Total	*Diplômés	†Post-scolaires	‡Passagers	Hygiénistes 1ère A. 2ème A.
Dalhousie.....	13	11	13	16	52	1	53				
McGill.....	34	34	38	35	137	4	141			1	
Montréal.....	39	48	42	47	175	1	176		10	1	
Toronto.....	80	79	75	76	293	17	310	3	14	40	11
Alberta.....	28	26	24	29	105	2	107				14
Total.....	194	198	192	203	762	25	787	3	24	42	11

* L'expression "étudiants diplômés" signifie les dentistes inscrits à l'Université, dans l'Ecole pour diplômés, et qui suivent un cours qui donne droit à un titre.

† L'expression "étudiants post-scolaires" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours qui donne droit à un titre ou à un diplôme.

‡ L'expression "étudiants passagers" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours de courte ou longue durée, ne donnant pas droit à un titre ou à un diplôme.

TABEAU no 2
Statistiques des inscriptions des étudiants ordinaires, 1940-57

	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940-41.....	31	58	104	210	51	454
1941-42.....	25	61	118	232	49	485
1942-43.....	25	67	139	270	53	554
1943-44.....	22	67	154	255	24	522
1944-45.....	28	51	162	264	34	539
1945-46.....	27	73	184	180	54	518
1946-47.....	38	111	188	340	108	785
1947-48.....	37	127	208	435	115	922
1948-49.....	41	146	224	478	123	1012
1949-50.....	48	147	225	478	136	1034
1950-51.....	48	145	196	380	114	883
1951-52.....	49	145	140	300	121	755
1952-53.....	50	141	111	294	123	719
1953-54.....	50	142	98	299	118	707
1954-55.....	48	138	130	313	119	748
1955-56.....	47	136	161	310	115	769
1956-57.....	47	137	184	305	112	785
1957-58.....	53	141	176	310	107	787

TABEAU no 3
Nombre total des diplômés, 1940-1957

	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940.....	12	13	23	56	13	117
1941.....	7	18	14	45	13	97
1942.....	8	9	31	40	32	120
1943.....	11	26	18	103	8	166
1944.....	6	12	37	61	24	140
1945.....	8	13	30	58	7	116
1946.....	0	5	41	56	0	102
1947.....	10	18	36	75	10	149
1948.....	9	15	36	24	13	99
1949.....	6	34	45	75	20	180
1950.....	11	36	42	168	49	306
1951.....	12	37	69	152	25	295
1952.....	12	36	55	85	27	215
1953.....	14	34	20	75	35	178
1954.....	14	37	20	69	32	172
1955.....	13	35	19	78	29	174
1956.....	13	38	20	76	26	168
1957.....	11	29	34	78	34	186

	Hommes	Femmes
Pour l'année 1957		
Dalhousie.....	11	0
McGill.....	29	0
Montréal.....	34	0
Toronto.....	76	2
Alberta.....	33	1
Total.....	183	3

TABEAU no 4
Distribution des étudiants par provinces et pays étrangers

	Terre-Neuve	Ile-du-Prince-Edouard	Nouvelle-Ecosse	Nouveau-Brunswick	Québec	Ontario	Manitoba	Saskatchewan	Alberta	Colombie britannique	Etats-Unis	Indes occidentales angl.	Indes occid. holland.	Bermudes	Nouvelle-Guinée	Hong Kong	Australie	Angleterre	Total
Dalhousie.....	8	3	19	11	53	2	3	4		2	2	1						5	53
McGill.....	2		1	2	16	4		1		7	44	6		1		1		141	176
Montréal.....		2	1	7	158			6		3								176	
Toronto.....					1	280	11	7		24					1	1	3	310	
Alberta.....							7	20	55									107	
Total.....	10	5	21	20	212	302	21	31	55	40	49	7	1	1	1	2	3	6	787

TABLEAU no 5

A—Pourcentage des étudiants canadiens de chaque province

B—Proportion des étudiants en rapport avec la population de leur province d'origine

Province d'origine	Pourcentage	*Inscription
Terre-Neuve.....	1.40	1/38,727
Ile-du-Prince-Edouard.....	.76	1/16,500
Nouvelle-Ecosse.....	2.67	1/33,952
Nouveau-Brunswick.....	2.67	1/26,905
Québec.....	26.98	1/22,443
Ontario.....	38.87	1/18,616
Manitoba.....	2.67	1/40,952
Saskatchewan.....	3.94	1/28,355
Alberta.....	6.99	1/21,091
Colombie britannique.....	5.08	1/37,175
Canada.....		1/21,078
Autres pays.....	3.42	

* Les chiffres de population sont ceux fournis par l'Office National de la Statistique au 1er juin 1957.

Note: Les étudiants canadiens aux Etats-Unis ne sont pas compris dans ce tableau.

Canadiens inscrits dans des facultés américaines:

Alberta.....	6
Colombie britannique.....	20
Manitoba.....	4
Nouveau-Brunswick.....	3
Ontario.....	7
Québec.....	1
Saskatchewan.....	3
Total.....	44

TABLEAU no 6

Formation prédenaire des étudiants

	2ième année	3ième année	4ième année	Diplôme canadien		Diplôme étranger	
				Bacheliers	Autres	Bacheliers	Autres
Dalhousie.....	19	4	—	23	—	4	3
McGill.....	25	17	1	59	1	34	4
Montréal.....	—	—	—	165	2	7	2
Toronto.....	230	11	2	43	2	—	22
Alberta.....	63	17	16	10	—	1	—

TABLEAU no 7

Diplômés possédant le titre de bacheliers

Classe de 1957	Total des diplômés	Diplômés de bacheliers	Pourcentage
Dalhousie.....	11	6	54%
McGill.....	29	16	55
Montréal.....	34	33	97
Toronto.....	78	11	14
Alberta.....	34	9	26
Total.....	186	75	40

Les étudiants peuvent-ils obtenir leur baccalauréat au cours de leurs études dentaires, finissant ainsi leurs études avec le diplôme de bachelier et celui de dentiste?.....	Dal.	Mc.	Mont.	Tor.	Alb.
	oui	oui	non	non	oui
Combien d'élèves ont fait de même en 1957?.....	1	4	—	—	0

TABLEAU no 8
Date du début et de la fin des cours

	1957-1958		1957-1958		Les élèves de 1ère an. doivent s'inscrire le:
	Début	Fin	Début	Fin	
Dalhousie.....	Sept. 3	Mai 15	Sept. 2	Mai 13	Mai 30/58
McGill.....	Sept. 4	Mai 28	Sept. 3	Mai 27	Mars 1/58
Montréal.....	Sept. 10	Mai 31	Sept. 16	Mai 30	Juillet 1/58
Toronto.....	Sept. 25	Mai 28	Sept. 24	Mai 27	Juin 1/58
Alberta.....	Sept. 4	Mai 16	—	—	Juin 2/58

TABLEAU no 9
Nombre maximum d'étudiants pouvant être acceptés, en 1ère année, dans les différentes facultés

Dalhousie.....	12
McGill.....	38
Montréal.....	60
Toronto.....	65
Alberta.....	30
Total: Canada.....	205

TABLEAU no 10
Moyenne du coût des études pour les quatre années

	Dalhousie	McGill	Montréal	Toronto	Alberta
Frais de scolarité.....	\$1,680.00	\$2,206.00	\$1,950.00	\$2,000.00	\$1,505.00
Instruments.....	785.00	1,000.00	950.00	1,033.83	1,150.00
Volumes obligatoires.....	165.00	inc. avec approv.	200.00	160.00	240.00
Fournitures.....	70.00	500.00	300.00	40.00	inc. avec instruments
Divers.....	175.00	inc. avec approv.	200.00	188.00	—
Total.....	2,875.00	3,706.00	3,600.00	3,421.83	2,895.00
Chambre & pension.....	2,560.00	*3,000.00	2,700-3,000	2,400.00	2,800.00

* Résidence à l'Université

TABLEAU no 11
Aide aux étudiants

	Dalhousie	McGill	Montréal	Toronto	Alberta
Bourse d'études pour les étudiants.....	oui	oui	oui	oui	oui
Prêts aux étudiants.....	oui	oui	oui	oui	oui
Bourses d'études pour les diplômés.....	non	non	oui	non	non

TABLEAU no 12
Inscription d'étudiants possédant des qualifications spéciales

	Dalhousie	McGill	Montréal	Toronto	Alberta
Admission d'étudiants possédant des qualifications spéciales obtenues à l'étranger.....	oui	oui	oui	oui	oui
No d'étudiants ordinaires dans cette catégorie....	6	3	1	21	2
No de ces étudiants venant de:					
Australie.....				3	
Autriche.....				1	
Allemagne.....				3	1
Grèce.....		1			
Hong-Kong.....				1	
Hongrie.....				2	
Lettonie.....				6	
Lithuanie.....		2			
Angleterre.....	1			2	1
Yougoslavie.....	5			3	
Canada (diplôme de dentiste franç.)....			1		

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A Conservative Consideration of Disturbances of the Temporomandibular Joint*

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In all probability the reason that I have been asked to discuss this subject is due to the conspicuous place that treatment of the temporomandibular joint has occupied in our contemporary literature and the difference of opinion that exists in the treatment of these disturbances.

Most of the articles which have appeared have contained voluminous bibliographies on this and related subjects and it would appear to be redundant for me to recapitulate all of this splendid work. It would also be time consuming and would contribute little to this particular discus-

sion for after all I am expressing only one man's opinion and have been requested to give my version of the handling of these perplexing problems.

I will, therefore, delve immediately into the meat of the subject and with extreme humility endeavor to express an opinion based upon my experience in treating and handling cases in this category.

Time will not permit me to discuss in

* Read before the Edmonton and District Dental Society — Dec. 2, 1957; the Vancouver and District Dental Society — Dec. 3, 1957; the Calgary and District Dental Society — Dec. 4, 1957.

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detail all the various types of disturbances of the temporomandibular joint and I am quite certain that even if time did permit, I would not be able to contribute a solution or a partial solution to all of the problems or relieve all of the symptoms that occur in this region.

I believe that the temporomandibular joint is subject to practically all of the congenital, acquired and degenerate diseases that occur in other joints of the body, particularly those having similar structural components. It must, therefore, be obvious that within the realm of present knowledge for some of these there is no specific treatment.

Let us consider some of the more common garden varieties. There is a patient who presents himself because of an annoying clicking during masticatory excursions and this symptom alone has become so annoying or embarrassing due to audibility that he is seeking relief. There is also the patient that complains of pain during masticatory excursions and the one who has both pain, clicking and hypermobility to the extent of partial or total disarticulation. These symptoms may be unilateral or bilateral and they may have become progressively worse over a long period of time to the point where discomfort became no longer tolerable. There is also the one who has hypermobility and disarticulation and he states that the jaw actually locks and only by manipulation is he able to reduce it. There is the patient who complains of pain upon opening and this may be a recent experience or a progressive one over a long period of time. There is also the patient who describes pain only upon closing or upon compression during mastication that in his endeavor to chew he must gyrate his jaw into such an abnormal position that it goes completely out of centric into a lateral or lateral protrusive movement and is unable to bite in a normal centric occlusion. This latter type is usually of an acute nature and I have seen several patients that have presented themselves with a cross-bite, claiming that this is the only position in which they are able to masti-

cate without pain. We also see patients who have trismus of varying degrees, either acute or progressive over a long period of time. Some describe symptoms of aching or crepitation with masticatory movements. These may or may not be accompanied by pain.

Frequently we encounter acute disturbances of the temporomandibular joint, the result of a recent fracture in the condylar or sub-condylar region attributed to a bony block and occurring during masticatory excursion and due to either a spasm or a displaced bony fragment following a known injury.

In addition to these, of course, we see cases with complex symptoms embracing almost all of the aforementioned, as well as many other bizarre reflex symptoms and syndromes, simulating many of the atypical neuralgias and dysfunctions. The latter frequently occur in the degenerative disease type and not infrequently are related to other degenerative processes within the patient's body.

Any of the above mentioned symptoms may be related to some obscure psychogenic disturbance which would further complicate the diagnosis.

Diagnosis can generally be made by clinical examination and evaluation of symptoms and history. Good diagnostic x-rays are essential in confirming or augmenting a clinical finding. Diagnosis of a degenerative disease in the temporal mandibular joint demands collaboration with a physician so that proper treatment-planning can be co-ordinated with the treatment of general systemic factors which may be contributing to the disease.

It is recognized that a diagnostic film of the temporomandibular joint is very difficult to obtain in all cases. It is only recently that some of our best roentgenologists have acquired a technique which fulfills this objective. Many x-rays have been diagnosed and reported to contain information revealing defects in the articular or periarticular structures which I have not been able to read into them. Many odd artifacts have been pointed out to me and interpreted as pathologic dis-

crepancies of the tissues comprising the joint which I have been unwilling to accept because of the imperfection of this photographic medium. Likewise I have rarely been able to see the irregularities and discrepancies so frequently described in an x-ray of the meniscus. Reports describing wrinkled, cracked, displaced or crushed menisci, I must confess are in most cases beyond my capacity to visualize.

One must be constrained to believe in the validity for all of the surgical exercise currently being employed in various parts of the world for the treatment of many of these disturbances by removal of the meniscus (menisectomy). The large number of cases in which this procedure is being employed in some localities must of necessity provoke some thought as to why it is not being employed in other places, where an equal number of cases are treated by other more conservative methods.

While discussing the subject of surgical intervention, we might consider the same philosophy which impells many surgeons to engage in surgical intervention and trans-osseous wiring for the large majority of sub-condylar fractures which they are called upon to treat. By the same token the employment of surgical intervention for extreme trismus and condylectomy for cases, the etiology of which is described as bony block. I have been engaged for several years in hospitals where patients after diagnosis had been referred for the purpose of surgical intervention to correct malfunction following traumatic episodes where x-rays showed cloudy irregularities in the temporomandibular region and the patients had little or no function. Many patients were referred for menisectomy to correct symptoms which had been described previously in this discussion. According to the records on one case the symptoms had been so severe that a menisectomy had been performed on the left side of a patient's mandible and due to a change of residence all of the diagnostic information together with x-rays accompanied her with

recommendation for a menisectomy of the opposite side. About three months had elapsed since the left side had been operated on and in the interim, she stated that the discomfort on the unoperated side had disappeared but the pre-operative symptoms had reoccurred on the side upon which the menisectomy had been performed. Needless to say the patient was not operated upon for the right menisectomy.

Permit me to describe one of the extreme cases, a recent one, who was admitted four years after her injury and who had almost complete trismus. It was with difficulty that upon first examination we were able to force one tongue blade between her anterior teeth. The patient was given a diagnostic anaesthetic to ascertain whether or not the patient actually had a bony ankylosis or an extreme fibrosis. Under an anaesthetic of N_2O+O + Anectine the patient's mouth was opened 4 centimeters. After such a prolonged trismus the patient was obliged to use traction appliances and embark on a regime of regular supervised physiotherapy so that the fibrosis could be broken down and the patient returned to function. Such physiotherapy in cases of this severity must be continued for many months. The point may arise that if this case had been treated by arthroplasty or other surgical intervention, this long period of time in which the patient had to engage in physiotherapy could have been eliminated. There, however, is no definite predictable assurance that this would be true if the fibrosis was so extensive and involved so much of the periarticular structures. Surgical intervention may result in a worse trismus than the one that was found at the time the patient was admitted. Surgical intervention to relieve temperomandibular symptoms by menisectomy or condylectomy or for the treatment of sub condylar fractures is frequently accompanied by symptoms far worse than those present when the patient was admitted for treatment.

Surgery in the temporomandibular region is very hazardous even in the hands

of experts and not infrequently is accompanied by tragic post-operative sequelae. Unfortunately our literature does not report the cases in which irreparable damage has been done to branches of the facial nerve during exposure of the temporal mandibular region. Likewise one does not read in the literature of the post-operative infection and delayed healing which produces cicatrization and fibrosis with the accompanying disfunction following surgery in this region.

I wish to relate the tragic post operative condition of a young female patient who was the victim of a bilateral condylectomy performed for the purpose of relieving a complexity of symptoms in her temporomandibular tissues. I saw the patient for the first time several months after her operation. Her jaws were immobilized with intermaxillary splints and she was suffering extreme pain in the temporomandibular region. She gave a history of many bizarre symptoms and atypical neuralgia from which she had not been able to obtain relief. She had sought treatment for relief of symptoms from New York to San Francisco. A post-operative infection developed in the wound of the right condylectomy and during the surgery one of the branches of the facial nerve was evidently severed. She was unable to close her right eye and subsequently developed corneal ulcers. Eye covers and various other treatments were employed but the ulcers persisted. Finally a plastic surgeon performed an operation on her right eye in which the margins of the upper and lower lids were freshened and half of the eye was closed by suturing the lids together. She must now face life with this deformity, plus her original symptoms.

By removing the intermaxillary splint and instituting a course of physiotherapy, partial function only was restored but up to the time that I last saw the patient I was unable to give her any permanent relief.

I believe we are in store for some interesting post-operative statistics upon menisectomy and condylectomy patients

which I think will shed interesting light on the permanent value of this treatment. I have spoken to many oral surgeons who are promiscuously engaging in this procedure and they have defended it by referring to the employment of a similar procedure in the treatment of other joints.

I was fortunate in being able to obtain some first hand information relative to three athletes who had operations for the removal of the meniscus in the knee joint and shoulder joint. One was a swimmer, one a basketball player and the other a football player. The athletic careers of all three of these athletes were ended following the operations and they all had impeded function of greater or lesser degree.

After the treatment of several hundreds of cases of subcondylar fractures with moderate or extreme displacement of fragments I am still of the opinion that conservative handling of these cases with proper post-operative physiotherapeutic guidance will produce end results which will give the patient adequate function, satisfactory esthetics and functional occlusion which from my standpoint would be sufficient criteria for my continued abstinence from surgical intervention with the attending unpredictable post-operative sequelae.

At a subsequent time I will present statistics on a large number of cases handled in this conservative manner which I believe will be convincing proof of my preference for this treatment.

There is, however, available a report by the Chalmers Lyons group¹ of one-hundred-twenty cases of subcondylar fractures treated without surgical intervention. The report on the progress of function of these cases several years after injury is reported in this paper. There has also been reported in the British Journal of Plastic Surgery by MacLennan,² another group of one-hundred-eighty cases of subcondylar fractures handled by methods other than surgical intervention with perfectly satisfactory results.

The often referred to bony block as the

etiological factor for resorting to condylectomy or false ankylosis following subcondylar fractures has been relieved in many cases by manual manipulation under block anaesthesia or in some cases by a deep, relaxing general anaesthetic. This permits extensive manual extension and repositioning of fragments relieving the bony block or locking which had impeded function or caused persistent pain.

Too much emphasis cannot be placed upon post immobilization physio-therapy and exercise. It is extremely hard to convince patients suffering extreme post injury and post treatment trismus that function can ever be restored to their jaws through their own efforts and voluntary exercise, augmented by various trismus appliances and aids. The patients are usually apprehensive or not convinced that anything can be done. They first must be taken in hand by the surgeon himself and not relegated to a physiotherapist who is less interested or less informed on the potential of such a procedure. The patient must be instructed and aided in the preliminary exercise in front of a mirror and shown that not only can vertical dimensions be increased but a divergence to the short side can be corrected and restored to centric by muscle exercise that will develop the muscles on the opposite side. This must be a persistent and relentless effort engaged in by the patient at regular intervals and a specific predetermined time at least three times daily. This also may be augmented by the patient wearing a trismus appliance during his sleeping hours.

Treatment of temporomandibular disturbances referred to previously may be handled in different manners.

After good diagnostic x-rays have been examined and found to reveal no degenerative changes in the articular or periarticular tissues, the first thing one must endeavor to ascertain is the etiology of the onset of the first episode. It often requires an infinite amount of patience and questioning to elicit the information that may lead to a solution of the problem. Many of these cases have as their pri-

mary onset some traumatic event which the patient has difficulty in remembering because of the length of time since the primary episode or the long intervals between the intermittent discomfort. I recall a case of a female patient in an apparently good state of body and mind who gave a history of her primary discomfort occurring about 18 months before her first visit. For some intangible reason I felt that her primary episode must be the result of trauma and I endeavored to elicit from her some prior event that transpired to which she could relate this onset. I asked her many leading questions—if she had been in an automobile accident—if she had fallen—if she had been struck in the face—whether or not she engaged in any body contact athletics. I also asked her if she had been to any parties where she may have imbibed too freely and not recalled a bump, fall or blow which could have contributed to this disability. To all of these her replies were in the negative. She then contributed the voluntary statement to convince me that there could not possibly have been any traumatic episode contributory. She said that she recalled specifically that the first time that she observed this discomfort in her jaw was while she was lying in the hospital after her last baby had been born. I asked her if she had a general anaesthetic during the "delivery of the baby and she replied in the affirmative. From this it might be assumed that this first episode was more than coincidental; that during the general anaesthetic it may have become necessary to employ a mouth prop to force her jaws open in order to install an airway or tube into her respiratory tract.

To further illustrate the difficulty with which some patients can remember primary traumatic episodes, I would like to relate briefly a case of a young woman who had a persistent pain in her temporomandibular joint and could give absolutely no history of any traumatic episode. Finally, after long questioning she inadvertently remembered that after coming home from a party on New Year's eve,

while walking into her unlighted living room she had fallen over a coffee table. X-rays of this patient revealed a crack in the neck of the left condyle.

I have treated many patients who had as their primary symptom, disfunction due to pain *only* and who had acquired abnormal biting habits. By the use of repeated injections of procaine into the interarticular space their symptoms have been relieved. This procedure has a two-fold therapeutic effect. First by its anaesthetic action it immediately permits the patient to assume a physiological movement of his jaw. Simultaneously it allows the tissues controlling the joint action to assume their normal physiological position and tone. This relaxation frequently relieves muscle spasms which may be contributory to the pain and disfunction. If the pain persists these injections are repeated; for procaine has been found not only to have an anaesthetic effect but a therapeutic effect upon the tissues into which it is infiltrated. For this type of case it is infrequently necessary to inject the patient more than two or three times before his symptoms are relieved.

Another question that may reveal some pertinent information relative to treatment of these cases is the one which will determine whether or not the patient has a definite period of the day at which the pain or discomfort is more profound. If he states his discomfort in using his jaws occurs invariably upon awakening in the morning and that after using his jaws for several hours the pain gradually disappears, one may assume that the etiology is of nocturnal origin. The patient may either have a habit of bruxism or of sleeping with his hand or fist under one side of his face. During complete relaxation while asleep the entire weight of the patient's head is transmitted to this point upon which he is lying and exerts abnormal stress upon the temporomandibular structure. This alone is capable of producing pain and chronic disturbances.

The patient who suffers with temporo-

mandibular disturbance will invariably accentuate the positive. He is continually fussing with his jaws endeavoring to reproduce the discomfort by opening or stretching his mouth to the point where the symptoms occur. This is a very important point to emphasize when discussing these things with your patient. You must stress the importance of his abstaining from this pastime.

It is possible for a patient to have an excessive hypermobility and completely disarticulate on one side while the other condyle remains well back in the fossa and opens like a hinge. The latitude of function within the temporomandibular joint is amazing and the ability for a patient to function adequately with major discrepancies is a revelation to those who have labored in the belief that a mandible must always be in perfect balance. It is impossible to explain all of the intangible factors involved in functional repositioning; but "functional response seems to appear when physiological demands exist."

One also observes cases where relatively minor discrepancies in occlusal equilibrium cause major disturbances and discomforts in the temporomandibular region. It is, therefore, desirable with most disturbances of the temporomandibular joint to have the bite equilibrated as near the optimum state as possible and, of course, to correct major discrepancies by operative or prosthetic means before any other treatment is instituted.

I would like to relate one case where symptoms of pain and discomfort accompanied by a clicking sound occurred only when the patient went into extreme occlusal position, during the final several millimeters of closure. During examination complete relief of pain could be accomplished by placing a tongue blade between the patient's teeth which prevented his biting beyond this point. He was unable to produce the pain symptoms when his mouth was held open to this degree. A casual examination revealed an extremely closed bite. This patient was immediately referred to his dentist with

recommendation that a bite splint be inserted and worn for a sufficient length of time to determine whether or not this apparent immediate relief was coincidental or whether it would be permanent if his bite were corrected. From the time of the installation of the splint the patient was free from pain so a permanent appliance was constructed.

The patient with a more typical distressing symptom of hypermobility, total or partial disarticulation, unilateral or bilateral with clicking or popping; with extreme pain or moderate pain and where x-rays reveal no degenerative processes in the articular or peri-articular tissues is the type most frequently submitted to surgical intervention. These are the symptoms described in the literature as the ones which have resisted all forms of treatment, consequently must be submitted to a menisectomy. This, of course, is the point of controversy because it is this same type of case with identical symptoms that I employ the non-surgical treatment with excellent results. It was in 1936 after the work of Dr. Lewis Schultz in his preliminary research on the use of fibrosing solution on dogs and my subsequent work with use of similar solutions fibrosing the joints of monkeys, that I embarked on the treatment of the temporomandibular joints of human beings. The use of the injected agent proved to have no deleterious effect upon the articular or peri-articular tissues and was only productive in the tightening and strengthening of the peri-articular tissues which control the excursions of the condyle from the glenoid fossa. It was after a year of observation with these experimental animals that this treatment was first used on human beings. Since then my results have been without disappointment and to the best of my knowledge patients have been relieved of their symptoms. Of course, there is a possibility that some who have not may have gone elsewhere for relief. I do feel certain, however, that

many of these would have returned to let me know if they were not satisfied with the results obtained. On rare occasions it has been necessary to re-treat a patient but never has it been necessary to resort to more than two or three treatments to obtain the end results on the several cases that have needed repeated treatment.

The treatment consists of a precise and meticulous injection into the interarticular space, of a solution which causes within the peri-articular tissues a fibrous exudate which ultimately results in a thickening and fibrosing of these tissues. This subsequently causes a restraining and repositioning of the condyle within the fossa and limits its anterior excursion of hypermobility or disarticulation. The technique must be precise for the solution must enter the inter-articular space. If the needle is used to probe the peri-articular space, more disturbance may occur or no results may be obtained. The injection of a fibrosing solution is preceded by an injection of 2% procaine or xylocaine. One-half c.c. of each solution is injected. The syringes only are changed after the primary insertion of the needle so that only one insertion is made on each side.

In the case of unilateral disturbance both sides are injected primarily but on subsequent treatments the asymptomatic side is omitted and again injected on the third treatment, so the affected side is injected at each treatment and the non-affected side on every other treatment.

Many solutions have been suggested for this fibrosing procedure and although some may be less irritating, I believe they are also less productive of the adequate fibrosing action. The solution of choice is Sodium Psylliate.

It is not infrequent for a patient to have a reaction following the first or second treatment; but, the symptom of discomfort and swelling is of short duration and the pain can usually be controlled by moderate doses of an adequate analgesic.

It has appeared that in those cases in

which a more intense reaction has occurred, the fibrosing and restraining action has been more rapid and profound.

TECHNIQUE

The patient should be draped with sterile drapes covering his head and his face should receive an adequate surgical preparation of the skin prior to the injection. The hands of the operator should also be gloved and sterile. Obviously there are many methods of palpating the inter-articular space before entering it with the needle but the author prefers to use the index finger of the left hand, upon which the fingernail should be filed even with the end of the finger.

The ease or difficulty in palpating the inter-articular space depends upon the overlying musculature of the facial tissues and frequently it is with extreme difficulty that one has definite assurance that he can feel the inter-articular space. On patients where the intervening tissue is very dense and intractable the tissues can usually be parted by continuous pressure over the condyle while the patient is instructed to slowly open and close until the condylar excursion is definitely felt beneath the finger and the fingernail can enter the space just above the condyle when the mouth is open. The point of original palpation is directly in front of the tragus of the ear. Beyond this point of orientation it is necessary for the operator to palpate until the space for insertion is definitely determined. At this point the assistant is instructed to place the mouth prop and the patient maintains this open position until conclusion of the injection on one side. The patient is then permitted to close and the procedure is repeated on the opposite side. Upon infrequent occasions the relation of the zygomatic arch to the condyle during its opening excursion is such that the inter-articular space can not be entered except when the mouth is closed.

Premedication with a grain and a half of pentobarbital is routine.

The patient should then be told that usually it is the procedure to wire the

teeth together so that the jaws will not be used excessively, however, if he feels that he can cooperate, that you will abstain from this procedure, providing of course, that he can keep his mouth partially closed for several days and eat only liquids or soft foods. Patients should always be seen the following day to observe the degree of reaction after which it may only be necessary to see him once or twice a week.

I have found that the ideal interval for treatment is two weeks, during which time any post-operative discomfort has disappeared from the site of injection.

Patients usually do not obtain relief from symptoms until after two or three treatments.

In the overall consideration of disturbances of the temporal mandibular joints one must not forget that they are subject to the same types of arthritis or neuritis found elsewhere in other joints. The etiology for these arthritides has often baffled those with the keenest diagnostic acuity. Hydro-cortone or other similar remedies have been used with some success in these types of disorders.

In selected traumatic derangement of the tissues comprising the temporomandibular joint surgical intervention is one's only recourse.

REST VS. MOBILITY

There appear to be many advocates of inter-maxillary immobilization in the treatment of almost all types of temporomandibular disturbances. I know of no cases where a permanent cure of a chronic disturbance has been effected by the use of this treatment. There are, however, indications where limited motion may be of advantage and a patient may expect relief from the use of heat and partial immobility.

Immobilization for the treatment of hypermobility of the temporomandibular joint appears to be "contributing to a delinquency". It is obvious that the peri-articular tissues are not able to exert their restraining function in cases of this type. Further inactivity for long periods of

time would contribute to their atrophy in a similar manner to other muscles of the body that are not permitted to function (disuse atrophy).

I think we can profit by observing the trend and change in philosophy that is so obvious within the healing art; e.g., the athlete with some strain or sprain causing some peri-articular inflammatory symptoms, is no longer put to bed or immobilized. If it is a weight supporting joint, it is given reasonable support with moderate splinting and frequently injected with procaine or some other anaesthetic agent which has both pain relieving and therapeutic properties and the part is permitted passive motion. Post

surgery patients who, heretofore, were kept in bed often for weeks are now frequently given bathroom and room privileges the first or second post operative day after major surgery and not permitted to lie or assume unphysiologic positions for any period of time. The logic in this philosophy seems to be predicated upon "functional rehabilitation in answer to physiologic demands."

BIBLIOGRAPHY

1. A Report on 120 cases of subcondylar fractures. Chalmers Lyon Group, Journal of Oral Surgery, Vol. V., 1957.
2. Consideration of 180 cases of typical fracture of condylar or subcondylar region of the mandible. W. D. MacLennan, British Journal of Plastic Surgery, Vol. V., 1952-53.

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Far East Influenza Virus, 1957; and the Dentist

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Although the term "Asian Flu" has taken firm hold in our daily newspapers and referred to constantly in our everyday conversation, virology experts such as C. Andrewes (England) and M. R. Hilleman (1) (U.S.A.) have recently suggested the interim name of "Far East Influenza viruses, 1957" (F.E.I., 1957). In the present paper, the latter term shall thus be utilized exclusively.

SCIENTIFIC HISTORY OF INFLUENZA

Actually, the initial experimental isolation of an influenza virus was accomplished by R. E. Shope in the U.S.A., from pigs, during an epidemic of "hog flu" in the mid-western states, during 1931.

The first isolation of a human influenza virus was announced two years later, (1933), from The National Institute of Medical Research in Hampstead, England. The project was captained by the late Sir Patrick Laidlaw, successfully em-

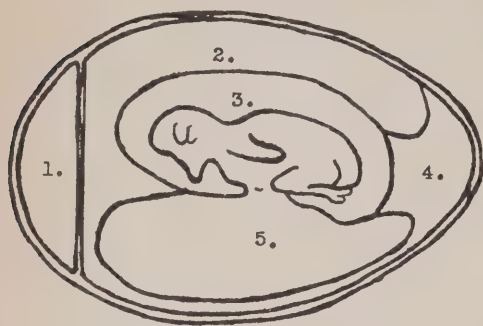


FIGURE 1

Diagram of the cavities of 11 day old chick embryo.

1. Air sac. 2. Allantoic cavity. 3. Amniotic cavity.
4. Albumen sac. 5. Yolk sac.

playing ferrets as the experimental animals.

It is rather interesting to recount several procedures leading to the primary scientific breakthrough regarding this human origin influenza virus.

Laidlaw and co-workers had recently completed a successful investigation of viral canine distemper. Besides young pups, they had discovered that ferrets were quite amenable to the disease, and death ensued. The London metropolis had been smitten by an influenza epidemic the previous winter (1932); and Laidlaw, Andrewes, et al, were prepared to try a myriad of experimental animals from white mice to apes and horses. It was thus a pleasant surprise, when nasally inoculated ferrets began to sneeze, run high temperatures and curl up miserably following intra-nasal placement of throat washings from the human influenza epidemic.

Furthermore, mice which until then could not be directly infected with human pathologic garglings, might now be made susceptible by washings following several initial transfers through the ferret.

In other words, the influenza virus had been taught to adapt itself to the white mouse, which is a far better laboratory animal than the ferret. (The latter are expensive, difficult to breed, and they bite.)

(a). In 1940, F. M. Burnet (2) an Australian, basically advanced our knowledge by mass producing the influenza virus within the amniotic cavity of a 13 day old fertilized hen egg, after 3 days incubation.

(b). That same year (1940), several American researchers found that the influenza virus might multiply more advantageously in the more superficial allantoic cavity of the fertile hen's egg . . . but this method was of no value in growing the virus directly from affected pharyngeal washings.

In 1941, G. K. Hirst, of the Rockefeller Institute, published an all-important theoretical and applied contribution to virology (as an independent science), when he noted that human type "O" or chicken red blood cells could be agglutinated by the influenza virus. Thus an actual quantity measurement of this virus might be titrated against a known suspension of chicken erythrocytes.

Meanwhile T. Francis Jr., (1940), classified a group B influenza virus wholly distinct antigenically, immunologically, and serologically from the A group. These washings he had secured during an influenza epidemic.

As the years went by, further strains invaded the population in new localized epidemics. Thus were hitherto unrecognized mutant types labelled A-prime (1947) and B-prime (1953).

Then, R. M. Taylor (1949) and T. Francis Jr., et al (1950), simultaneously isolated influenza virus C and demonstrated the existence of specific neutralizing and complement fixing antibodies.

Elucidating the actual universal parasitism of this pneumotropic virus, several Japanese (3) (1953), isolated still another variant (also present in the U.S.A.) which was eventually proven to be distinct from influenza A, B, and C. It was classified as influenza D, by T. Francis, Jr.

The latter two groups are presently rather unimportant, for they are stable antigenically, and appear irregularly. Thus an effective vaccine can be develop-

ed for them . . . but not so for the A and B groups which mutate frequently.

According to F. M. Burnet, there are some 33-35 antigenically different influenza viruses. Hence, with the appearance of the mutant Far East Influenza virus, 1957, previous multivalent influenza vaccines are worthless against it, and a new specific monovalent vaccine is necessary for antibody production to combat possible invasion of this antigenic variant.

DENTISTS AS PROBABLE DISSEMINATORS
IN THE EPIDEMIC DIFFUSION OF UPPER
RESPIRATORY DISEASE.

On August 3rd, we visited a summer camp near Skowhegan, Maine. It comprised two distinct entities; one for boys aged 6-17, another for girls in a similar age bracket, and separated by a quarter mile walking distance; but owned and managed by the same group. Most campers were from upper middle-class homes, ranging through Ontario and Quebec, Boston and New York, but as far south as Louisiana, and westward as far as Ohio. Approximately 100 campers (exclusive of councillors and general maintenance crew) were in each division.

The food was dietetically excellent, and fresh air hikes, swimming, outdoor sports, etc., were daily routine. The youngsters slept eight to a bungalow—which were clean and well ventilated. It seems reasonable to assume that the majority were most resistant at this time to bacterial, fungal, Rickettsial and/or viral infections.

Early in June, 1957, the influenza infected crew of a U.S. destroyer docked at Newport, Rhode Island, (4). The latter state is in the midst of a densely populated Eastern seaboard. Seeding is rapid, with such a known highly infectious disease.

Parents were permitted visits to their children on week-ends. Some 100 parents (mostly business people and professionals—consistently in direct contact with scores of individuals), arrived for the major July 27, 1957 week-end visit of the

summer. Most had travelled 200-500 miles, from variously scattered points.

The first sprinkling of camp cases appeared about the 31st of July, and by August 3rd there were some 25 young girls bedridden with high fever, often reaching 103-104° F.

Major onset symptoms were scratchy throat, mild headache and malaise, but towards nightfall a sudden rise in temperature to 102-103° F, diffuse perspiration, chills, stiff bone joints, and aching muscles.

On August 4th, a further fifteen girl campers were affected. A reasonably strict quarantine was imposed and relatively few cases were reported from the adjoining boys' camp.

This was the acme of the epidemic, but all in all, approximately seventy per cent of the girl campers were affected by this highly contagious infection, the differential laboratory diagnosis of which remains unknown (5). The clinical resemblance to epidemic influenza seemed prominent, but adenoviruses (APC, RI, ARD group of viruses) or other agents may have been responsible.

As for myself, I departed August 5th for the 250 mile return trip to Montreal, after having fished in the lake all day in addition to subsisting on an excellent nutritional standard during the sojourn.

I returned to dental practice August 6th with only healthy physical symptoms, and accomplished dentistry for some ten patients.

That evening I lacked an appetite yet managed to gulp my dinner. Feeling somewhat ill at ease, I lay down, and by 9 p.m., the fever had reached 101° F. with all the disease symptoms heretofore enumerated. The fever did not at any hour, exceed 102.8°F.

On the third day, temperature was relatively normal, while mild diaphoresis, general muscular weakness and tiredness were the only remaining untoward symptoms.

HOW TO ISOLATE THE INFLUENZA VIRUSES.

. . . Making ample use of the basic scientific discoveries heretofore outlined.

Step 1. Selecting patients in the acute stages of the disease, running temperatures of at least 100-101°F.; 15cc. of boiled water are gargled and expectorated into a sterile wide-mouthed test-tube and stoppered. Penicillin and streptomycin are added to inhibit bacterial proliferation. This may be stored in the frigidaire or freezer overnight, and forwarded as soon as possible to the nearest virology laboratory, preferably paper-wrapped within dry ice (-70°C)

Step 2. The laboratory technician filters the gargled throat washings, thus eliminating oro-pharyngeal debris.

Step 3. Six candled viable fertile hen eggs, 13 days old, are then inoculated with 0.1cc. of the filtrate, into the amniotic cavity of the embryonated eggs, and replaced in the 37°C, incubator for a period of 3-5 days, to enable the virus to multiply a thousand fold, and more.

Step 4. The amniotic fluid and lungs of the chick embryos are pooled, and added to an 0.5% suspension of washed chick redblood cells. Should influenza virus be present (or mumps, fowl plague, and/or Newcastle disease virus), the Hirst phenomenon will occur, and the erythrocytes agglutinate. If we add the supernatant fluid to further test tubes of erythrocytes, similar agglutinations will proceed; for the virus is eluted spontaneously, some two hours following agglutination.

Occasionally throat washings harbor influenza particles, yet multiplication will not occur in the amniotic cavity, thus rendering the agglutination test negative. In these cases, it is necessary to successfully culture the preceding amniotic fluids into a new batch of six fertilized hen eggs, until the influenza virus is "egg-adapted" for multiplication. Diagnoses are considered negative should two successive passages within the amniotic fluid

fail to register a positive Hirst agglutination test.

When laymen jibe that an epidemic has come and gone, while the population anxiously awaited laboratory diagnoses, the above time consuming procedures answer the taunts. More rapid viral diagnoses with trypsinized monolayer tissue cultures may be in the offing. (6) (7).

Throat washings of sick U.S.A. naval men had been received from Japan by M. R. Hilleman, through courier. At the Walter Reed Hospital in Washington, D.C., (April 20, '57), he proceeded through the four steps previously outlined.

Step 5. Once the washings had been proven to be influenza, they were tested against all known influenza antisera containing specific inhibiting antibodies for groups A, B, C, D, and variant types A'. B', swine A, etc. No prepared antisera mixed with the unknown virus, prevented the agglutination of R.B.C. It was thus proven by the "haemagglutination-inhibition test" that a new variant of the group A specific antigens was spreading rapidly through the Far East.

Step 6. On May 24, 1957, six American pharmaceutical companies (Lederle; Parke-Davis; Merck; Sharpe and Dohme; Pitman-Moore; Eli Lilly, and National Drug) received freeze-dried (lyophilized) Far Eastern Influenza virus from The National Institute of Health, Bethesda, and immediately inoculated these viral suspensions into allantoic cavities of 11 day old living, fertile hen eggs. Punctures were sealed with collodion and allowed to incubate for two days at 37°C.

(Canada's only two producers are the Connaught Laboratories, Toronto, and L'Institute de Microbiologie, Montreal. Their original viral samples were supplied by the Department of Health, Ottawa.)

The allantoic fluid—embryo blood mixture (light orange in color) is siphoned off, and forms the raw viral containing material, to be purified.



FIGURE 2

Harvesting vaccine. Technician aspirates some virus-laden egg embryo fluid with syringe.

Step 7. Under sterile conditions, the pooled virus-laden allantoic fluid is centrifuged in batches at 50,000 revolutions per minute ($\times 90,000$ G.). Initially, there is relatively meagre yield, but as the virus becomes increasingly egg-adapted, the actual number of viral particles increases. National Drug Co. secures approximately three human vaccine doses from two fertilized hen eggs. (8).

The virus is concentrated twenty times as compared to the original aspirated allantoic fluid and then diluted with phosphate buffer solution.

Step 8. Formalin is added to inactivate the virus. Further centrifugation at 2,000 r.p.m. removes coarse particles. By early July, 1957, "a successful vaccine" had been tested by the U.S. Public Health Service. (8).

Step 9. Vaccine vials now can be examined to ascertain bacteriological sterility.

Biological tests on ferrets and humans are also performed to note formation of antibodies, allergenicity, effectiveness when challenged with viable virus, etc. 1cc. of vaccine possesses a quantitative measured strength of 200 CCA's* (chicken cell agglutination units), as marketed by Lederle, Inc.

Vaccine effectiveness. How effective is the monovalent Far Eastern vaccine in an actual epidemic, or under controlled clinical experimentation within an institution or community?

The correct answer for this important question awaits time. If we refer to the 1947 influenza epidemic, wherein the A-prime variant was first detected, the polyvalent vaccines offered to patients were valueless yet had heretofore provided ample protection for swine A, A and B groups, until the new A-prime mutant appeared in that year. Furthermore, Francis, Salk, et al, reported an 8-fold diminution in a controlled clinical epidemic with influenza B.

Preliminary tests on 55 volunteers at Patuxent Institution, Maryland, shows the Far Eastern vaccine, 1957, as 70% effective. (10).

The latter result is not considered significant by the medical profession. At a recent Montreal medical symposium, Dr. P. H. Long, (11), proffered the effectiveness ratio of the vaccine "as now developed" to be only 35%, but most physicians suggest 50% effectiveness, which is quite beneficial considering that some 26 million people in the U.S.A. (11) may be bedridden with this infection if unvaccinated.

Influenzal tissue cultures. Although egg-adapted influenza viruses are employed exclusively for commercial vaccines, the infectious particles may also be propagated in certain tissue culture systems (12) as is presently done with polio vaccine.

It has been demonstrated feasible to

* A law has recently been passed in the U.S.A., requiring manufacturers of Far Eastern influenza vaccine to standardize commercial preparations to quantitate a minimum of 400 CCA's/cc.

isolate influenza A and B in cellular cultures of human embryo lung and kidney, and adult monkey kidney with formation of infectious particles that could be propagated in series.

The cellular cytopathogenic spectrum for influenza A and B appears limited. Attempts to propagate both major influenza groups in normal epithelial, normal fibroblastic, or malignant cell cultures (He La, KB) of human origin . . . were uniformly unsuccessful regardless of amount of virus inoculated or previous passage history. (12).

The fertilized hen egg must therefore be employed for influenza vaccines as tissue cultures are far more expensive, troublesome, adaptable with difficulty and inferior regarding multiplication of infectious antigenic particles.

Vaccine Administration. A difficult problem is whether the monovalent vaccine (as presently prepared) is more efficacious given (a) intradermally (b) subcutaneously (c) intramuscularly.

It seems logical to favour intradermal inoculations for the following reasons:

(1) A small dosage is required i.e., 0.1cc. intradermally as compared to 1cc subcutaneously or intramuscularly.

(2) Retarded absorption within cells of the skin. The vaccine is eliminated far more rapidly via the subcutaneous route, thus offering the lymph glands and spleen less chance of creating specific antibodies.

(3) Present vaccines are all toxic, especially for tots, and children below the ages of ten. Two doses x 0.1cc., within 4-7 days would seem sufficient for antibody formation. A newspaper item (Aug. 22, '57) reads as follows:

"Two Brooklyn children who have been given the vaccine by a private physician, suffered strong reactions. Both ran temperatures of 105 degrees and were hospitalized." (13)

It appears that 1cc. subcutaneous doses of the toxic but non-infectious vaccine were administered.

Since all virus antigens are heterologous to human tissue proteins it is deemed sensible that as little as 0.1cc., would alert the defensive antibody mechanism within our systems.

(4) A great number of people are allergic

to eggs, chicken and chicken feathers. The medical profession (including clinic nurses) do not constantly obtain case histories. Here, once more, the intracutaneous route is superior, perhaps circumventing many cases of severe allergic reactions (even anaphylactic shock), when it is realized that actually millions will be vaccinated.

(5) A ten-fold conservation of vaccine would be effected, benefiting more humans; thus by-passing black markets and scarcity.

Although the U.S. Public Health Service is opposed to intradermal immunization, basic research to scientifically evaluate this method is in progress at the University of Miami, and N.Y. Hospital.

Viruses and possible biological warfare. Behind all this present fear of so-called "Asian Flu" one may rightly reason, that a further highly infectious, virulent variant (resembling 1918-1919 pandemic influenza), might intentionally be isolated, cultured, and through use of a dozen fanatic volunteers crucially placed in country X, cause there a terrible epidemic. Yet should a massive vaccine program have previously been undertaken by country Y, and its citizens immunized, it might thereby possibly triumph without striking the match.

Thus along with atomic and hydrogen bomb warheads in I.C.B. Missiles, viruses may perhaps become an ultimate weapon.

To quote an outstanding authority on viral diseases, and influenza in particular, Sir F. M. Burnet, (1953):

"I doubt if any war department has yet thought seriously about the uses of viruses in war . . . I see no reason why with the continuation of current types of research it should not be physically possible to produce such a weapon in twenty or thirty years' time". (2).

"Nerve gases" or anti-cholinesterases were an outgrowth of biochemical studies on enzymes, and their eventual application was not for cure of disease, but mass synthetization for use in war, as a specific deadly enzyme poison.

Is it then possible to synthesize a pathogenic, infectious virus? Yes. Present research trends indicate that such a project, if undertaken, may be successful.

within the next decade, or at least within the forthcoming generation.

A Ciba Foundation Symposium (1956), on "The Nature of Viruses" (14) composed of 34 participating international viral experts, agreed that most small animal and plant viruses (10 m μ -100 m μ), including the infectious influenza particle, were actually cores of nucleic acid (genetic material), surrounded by a coat of protein (antigenic specificity). The actual infectivity is coded within the nucleic acid, and rests inside the nucleic acid composed of some 3,000-7,000 nucleotides.

(a) The biosynthesis of ribonucleic acid (RNA) has been achieved for the first time in 1957.⁽¹⁵⁾

(b) Dr. Heinz Fraenkel-Conrat (University of California), put together a hybrid virus by crossing the protein and nucleic acids taken from two different strains of tobacco mosaic virus.

(c) Another most fantastic experiment, performed by Rose Litman and Dr. A. B. Pardee⁽¹⁶⁾ (under supervision of Nobel recipient virologist W. M. Stanley), have caused 10 per cent viral mutations, by displacing the thymine base from the nucleotide, through substitution with another pyridine base, uracil.

Thus we can produce virus offspring of a totally different infective nature than the original nucleoprotein. This will be adapted eventually to disarm disease. But as with nerve gases, it may also be applied to decimate mankind, by producing exceedingly virulent viruses.

Dental Discussion. Possible complications involved in performing general or dental surgery, prior to or following bouts of influenza are varied and dangerous. Since the onset of influenza is sudden, patients may enter for dental extractions or more extensive oral surgery, as impactions, apicoectomies, etc., while they are in the first or second day of actual influenza incubation. With a true temporary bacteremia immediately following the extraction of every tooth, the apparent ease with which these obligatory intracellular parasites can multiply in a host where influenza virus has already gained a foothold is important.

In Canada, tabulations compiled by the Canadian Press, showed that as of Oct.

15, 1957—not a single Canadian died directly with Far Eastern Influenza, but 39 succumbed following complications.

Any youthful, middle-aged, or older person may enter for dental surgery, immediately preceding or following influenza, without our knowledge.

Resistance being low, various complications are to be expected. It is prudent to share some worries with our medical confrères, and seek their advice prior to accepting possible major responsibilities.

Summary. There are four major immunological divisions of influenza virus: Groups A, B, C and D.

A and B are the most important groups, comprising several types and many strains.

Influenza A appears in epidemic form every 2-3 years; influenza B similarly every 4-6 years.

The Far Eastern Influenza virus, 1957, is a mutant type, belonging to group A, but which antigenically represented a major shift from types A, A-prime and swine-A influenza viruses of previous years.

Further waves of this highly infectious pneumotropic disease are expected, as in the 1918-19 pandemic, but with comparatively few fatalities.

Dentists are probable carriers and disseminators of respiratory disease agents, while being conversely affected through their patients.

"Some fatal pneumonias in England and Wales in recent weeks have in all probability been due to the malign combination of influenza and staphylococcus."

Erythromycin and novobiocin are two antibiotics to which the staphylococcus organism is "most likely to be sensitive". (17).

Where indicated, it would thus seem logically appropriate during the approaching autumn, winter, and early spring months, for dentists to prescribe less of penicillin or the broad-spectrum antibiotics, and switch to adequate oral doses of erythromycin (2Gm./day).

Addendum. Within the elapsed time interval following completion of this paper, three noteworthy facts have come to our attention.

(1) The Far Eastern Influenza virus, 1957, is passing through Japan, in a second wave. To quote Dr. L. E. Burney, U.S. Surgeon General:

"It is a possibility that the United States will be hit a second time."

This will doubtless include Canada. The continuing "relatively mild" parasitization should not disquiet us.

(2) Drs. D. E. Rogers and E. D. Kilbourne of the New York Hospital--Cornell Medical Center were unable to isolate any bacteria from four young adult rheumatic heart patients who died with lung infections "apparently caused by the flu virus alone." The F.E.I. virus, 1957, seems to be particularly virulent for rheumatic heart patients, and since most dentists regularly treat one or more within this group, semi-urgent exodontia, (even local anesthesia), might be deferred until the summer months; as there is no known anti-viral chemotherapy presently available to the healing professions.

(3) We quote verbatim the following summary of a report on the efficacy of Far Eastern Influenza vaccine, issued by members of the Commission on Influenza of the U.S. Armed Forces Epidemiological Board. (18).

"Antibody response of man to 1 ml. of 200 CCA units of Asian virus given sub-

cutaneously has been found to be suboptimal. (Nevertheless, an important degree of protection against Asian influenza has been shown in clinical trials of vaccines of that potency.) With higher doses of vaccine, antibody response was more uniform and the yield of antibody was greater. Concomitantly, a greater degree of protection was observed. These findings support the recommendation that, in the present situation, an Asian virus vaccine of 400 CCA units be used for primary immunization."

BIBLIOGRAPHY

1. Meyer, H. M. Jr., Hilleman, M. R., et al. New antigenic variant in Far Eastern Influenza epidemic, 1957. *Proc. Soc. Exp. Biol. & Med.* July 1957, P. 615.
2. Burnet, F. M., *Viruses and Man.* (1953) A Pelican Book. P. 106.
3. Kuroya, M., Ishida, N., & Shiratori, T. Newborn virus pneumonia (type Sendai). 11 Report. The isolation of a new virus possessing hemagglutinin activity. *Yokohama Med. Bull.* 4, 217-233, 1953.
4. *Newsweek* magazine, P. 66, Aug. 26/57.
5. Oakes, Margaret, H. Personal communication. State of Maine Dept. of Health And Welfare. Oct./57.
6. Rhodes, A. J. Recent advances in the laboratory diagnosis of virus infections *Ann. of Internal Med.* July, 1956 P. 106-117.
7. Rauch, B. Attempts to isolate a virus from infected root canals and periapical tissues, using monkey kidney cell cultures. May/57. (as yet unpublished).
8. *New York Times Magazine.* Sept. 1/57. Vaccine vs. Flu: The ABC of it.
9. Francis, T. Jr., Salk, J. E., and Bruce, W. M. J. *A. M. A.* 131. 275. May 25, 1946.
10. *Time* magazine. Sept. 9, 1957. Medical section.
11. *Montreal Gazette.* Sept. 21/57. *Montreal Medico-Chirurgical Society.*
12. Green, I. G., Lieberman, M., Mogabgab, W. J., The behavior of Influenza viruses in various tissue culture systems. *Journ. of Immun.* April, 1957, P. 233.
13. *New York Herald Tribune* Aug. 22, 1957. N.Y. warning on vaccine.
14. Harrington, Sir Charles (chairman). The Nature Of Viruses. *Ciba Foundation Symposium.* 292pp.
15. *Newsweek*, Jan. 28/57. Periscoping medicine.
16. *Newsweek*, Jan. 7/57. Disarming the virus.
17. *The Lancet*, Oct. 25/57. Excerpt from *Montreal Star-Herald.*
18. Vaccination against Asian Influenza. *The Journal of The American Med. Assoc.* Dec. 21/57. P. 2055.

Contribution de l'Institut de Microbiologie et d'Hygiène de l'Université de Montréal. — No 140

Scientific Manpower. We must undoubtedly hold that if a larger supply talent exists than is discovered, developed and put to use that, since, as we have seen, it is so valuable when estimated in terms of social progress, we are dealing wastefully with talent. We are allowing great ability to go to waste since we are leaving it to lie in its undeveloped form. Therefore one of the problems of the proper conservation of talent consists in finding a method of discovering and releasing this valuable form of social energy. . . .

We shall be wise when we realize the worth of our workable talent and so establish its working conditions that it may secure the full measure of its productiveness. If scientific management for the mass of laborers of a nation is worthwhile how much more serviceable would it be to extend its fruitifying influence to the most able members of the community. John M. Gillette, "The Conservation of Talent Through Utilization," *The Scientific Monthly* 1:151, 1915.

Evaluation of Oral Antibiotic Therapy*

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Whether due to the failure of public acceptance or lack of confidence of the dentist, the injection of antibiotics is not generally practised by the profession. In cases where this therapy is indicated, referral to a physician is the usual procedure. Since the mode of administration appears to be the only reason for such a procedure, it is hoped that this paper will, in some measure, help to restore the prescribing of antibiotics for dental infections by the dentist. The most commonly used antibiotics will be discussed with special attention to oral administration.

PENICILLIN

Penicillin is without doubt the most valuable and effective single agent which we possess for the treatment of all the commonly encountered infections and is the drug of choice for —

- Staphylococcus aureus
- Staphylococcus albus
- Streptococcus hemolyticus
- Streptococcus viridans
- Vincent's spirochete

Penicillin possesses several important properties —

- (1) It is readily diffusible through tissue spaces.
- (2) It destroys bacteria without destroying white blood cells, which are the body's natural defence against infection.
- (3) In contradistinction to sulfonamides, the action of penicillin is not inhibited by pus, blood, etc.

Penicillin Resistance

The *only* penicillin sensitive organism which has proved to develop any important degree of resistance is the Staphylococcus. In large hospitals this constitutes a definite problem. However, many strains are naturally resistant, so the blame for this condition cannot wholly be placed on penicillin.

Reactions to Penicillin

Penicillin is non toxic in maximum therapeutic doses. With intramuscular therapy, reactions do occur in two per cent to five per cent of cases. Urticaria is seen most commonly. The delayed serum type reactions are much less common but more serious. Once a patient is allergic to penicillin, he will usually react for a year or more. After a lapse of this time penicillin may be used again, with caution if indicated. The treatment of penicillin reactions consists essentially in the use of frequent small doses of adrenalin and antihistamines.

Administration

1. Injectable

(a) Potassium Penicillin G. Aqueous

A single dose of 300,000 units gives a very high blood level in one half hour which falls rapidly to zero in about four hours. Hence, continuous therapy requires injections every two to four hours, and it is almost limited to hospital use. This regimen is necessary only for the most serious type of infections —

- (1) Subacute bacterial endocarditis
- (2) Septicemia

* Presented as a Table Clinic at Home Talent Night of the Vancouver and District Dental Society.

(3) Staphylococcal resistance

(4) Meningitis

(b) Procaine Penicillin G. suspension

A single dose of 300,000 units will produce a high peak level in one hour which falls quite rapidly during the first four hours, but is generally adequate for one day.

By fortifying this injection with 100,000 units of potassium penicillin, a slightly higher peak is produced during the first few hours.

The foregoing are the most common of the injectable types of penicillin. For the majority of infections, this is good therapy; the cost is low, but it still requires injection.

2. Oral

Until recently oral administration has been impractical because of the large doses needed and therefore the increased expense. Now with the drastic reduction in cost, and the better understanding of the factors affecting oral penicillin therapy, this is no longer so.

Of all the various factors, most can be controlled and applied. These include dosage, salts used, effect of food, penicillinase and blood levels. Two factors have resisted efforts to overcome. These two are —

(1) protection of penicillin from destruction by gastric juices

(2) increasing penicillin absorption from the small intestine.

With regard to the latter, the cause of why nowhere near 100 per cent absorption takes place from the duodenum is unknown, and little progress has been made in solving this problem.

The other problem has been met in two important ways —

(1) By incorporating 500,000 units of penicillin G. potassium in a special acid-resistant binding material and a special granule coating a new tablet has been developed. Extensive tests

have been made by the manufacturers, Ayerst, McKenna and Harrison, who call their tablet Hylenta, to show that the tablets are acid insoluble but alkali soluble. Passing through the stomach relatively intact, the penicillin is released in the duodenum where absorption takes place.

(2) The discovery of a new penicillin, phenoxymethyl penicillin (penicillin V). Penicillin V, which first became commercially available in 1955, is unique since —

(a) Its solutions are extremely stable even when in acid.

(b) It has an inherent stability.

(c) Blood levels with oral administration of penicillin V are similar to those of intramuscular injection of penicillin G at comparable doses.

(d) It can be administered without regard to meals.

(e) Hypersensitivity is extremely low.

Studies in this country were initiated by Wyeth Laboratories, who manufacture their product in tablets of 200,000 units and 500,000 units under the name of Pen-Vee-Oral.

TERRAMYCIN (OXYTETRACYCLINE)

The use of terramycin deserves important consideration in the treatment of infections. It has a wide range of activity against bacteria, especially gram positive organisms, rickettsial and large viruses. Since terramycin is rapidly absorbed from the gastrointestinal tract and oral administration is convenient, this form is preferred for systemic therapy. The adult dose is 250 mgm every six hours. It has little toxicity and is usually well tolerated. Side effects are limited to the gastrointestinal tract and usually are of little consequence.

Several investigators, notably Osserman, Pollock, Archer and Riddle have done work on oral infections using terramycin, showing uniformly good clinical results.

ACHROMYCIN

Achromycin belongs in the group of so-called broad spectrum antibiotics. It is more potent against gram positive than gram negative organisms. As in the case of terramycin, achromycin has been useful in the treatment of Staphylococcic infections that are resistant to penicillin.

Clinical and laboratory studies show that when achromycin is orally administered it is readily absorbed from the gastrointestinal tract. Blood concentrations occur within two hours and persist for six to eight hours following dosage. The average oral adult dose is 250 mg. every six hours.

Since usually the primary causative organisms associated with dental infections are Staph. aureus and Strep. viridans, the other antibiotics such as streptomycin and chloromycetin have a limited use. Streptomycin continues to be the most potent agent against tuberculosis. Chloro-

mycetin is the best anti-infective drug for the treatment of typhoid fever, and they are the two most effective antibiotics in the treatment of influenza bacillus infections.

CONCLUSION

In prescribing for dental infections the dentist has at his disposal a wide range of antibiotics that may be administered orally. To use these agents with the greatest efficiency and with the lowest cost to the patient, it is essential that a proper etiological diagnosis be made and the best drug be selected and used.

REFERENCES

1. Keefer, C. S. (M. D.) Evaluation of Antibiotic therapy. Post Grad. Med. Feb. 1951, (Vol. 9, No. 2).
2. Welch, H. (Ph. D.) Phenoxymethyl Penicillin. Antibiotic Medicine, Vol. 2, No. 1, Jan. 1956.
3. Nathanson, I. G. (D.D.S.) What's New in Medical Dentistry. Mass. Dental Journal, July, 1956.
4. Musselman, M. M. (M.D.) Terramycin, Antibiotic Monographs No. 6. Medical Encyclopedia Inc. New York, 1956.

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Vertical Height of the Body of the Mandible and the Occlusal Level of the Teeth in Individuals with Cleft and Non-Cleft Palates*

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INTRODUCTION

Investigations on the growth of the mandible have been reported for many years. As early as 1778, John Hunter in his, "The Natural History of the Human Teeth" noted that the vertical height of the mandible was gained principally by growth of the alveolar border. Hunter's conclusions were based on experiments on growing pigs, fed on madder-soaked bran,

the vital stain being formed on newly formed bone. This was confirmed by Brash ('24), over one hundred years later.

Baker ('11, '22) carried out experiments on rabbits, dogs, cats and sheep. He ground the teeth of one side out of occlusal contact. Disuse of the one side affect-

*A Thesis submitted as partial fulfillment of the requirements for the degree of Master of Science in Orthodontics in the Graduate College at the Chicago Professional Colleges of the University of Illinois, 1955.

ed not only the jaws, but bones of the cranium as well. Noyes ('13) expressed the idea that if functional stimuli were vigorous enough, there would be sufficient space created for the accommodation of third molars. Friel ('28) discussing the decrease in vertical height and the increase in overbite in modern populations, concluded that a lack of occlusal function must be responsible for the gradual reduction in the depth of the lower jaw from the Saxon to those of modern man. Wallace ('27), Stillman and McCall ('37), Box ('40) and Kronfeld ('39) also believed that function was an important factor in bone development. Watts and Williams ('51) studied the effect of the physical consistency of food on the growth and development of the mandible and maxilla of the rat. Their findings indicated that function as influenced by differences in the physical consistency of food, was an important factor in the growth and development of the mandible and maxilla of the rat.

Brodie ('41) studied growth from the third month to the eighth year of life by means of cephalometric roentgenology as described by Broadbent ('31) and Hofrath ('31). Commenting on the mandible, he said: "The increase in height of the body of the bone is almost entirely at the alveolar border." He further held that "the morphogenetic pattern of the head is established by the third month of postnatal life or perhaps earlier, and once attained, it does not change." This independence of form from function has been supported by clinical evidence in abnormal conditions. Ivy ('39) presented a case of pseudoanodontia in which all teeth developed but none erupted so that occlusal function was absent. There appeared to be no evidence of underdevelopment of the jaws. Similarly, true cases of anodontia, reported by Battersby ('36), Kuhlo ('32), Rush-ton ('04), Thoma ('27) and Sarnat and Brodie ('42) have indicated that the mandible had developed normally in length without the function or eruption of the

teeth. Such individuals, however, formed no alveolar processes.

Murray and Huxley ('25) and other experimental embryologists have performed transplant experiments to show that differentiation can take place even if a part is removed from its normal developmental environment and transplanted to one in which its nourishment is adequate. Harvold ('54) studied the relative independence of the different parts of the facial skeleton in a group of children with complete unilateral cleft palate. He compared one part of the upper face with the other. He found that abnormal function affecting respiration, speech and mastication, does not exert a significant influence upon the form of the bones outside the maxilla and palatine.

It has been observed that in unilateral cleft palate individuals, some of the maxillary teeth on the side of the cleft are not in contact with those of the mandible, while the non-cleft palate side of the same patient has such occlusal contact. Thus, the unaffected side of the mandible enjoys occlusal function whereas the cleft side does not.

The purpose of this study was to determine whether the absence of occlusal contact on the cleft side affected the development of the vertical height of the body of the mandible in any way, as compared with the other side of the same individual where the teeth were in contact. Specifically, it was desired to know whether form and absolute size of the body of the mandible differed in unilateral, bilateral and non-cleft palate individuals.

MATERIAL

The material for this study consisted of three groups of children from two sources. The first group was composed of children with unilateral cleft palates; the second group of children with bilateral cleft palates. These two groups had the clefts operated upon previously and were derived from the cleft palate department of the Hospital for Sick Children, Toronto,

Ontario. A non-cleft group was obtained from the Burlington Orthodontic Research Centre, Burlington, Ontario. The age and sex distribution of the groups is shown in Tables I, II and III.

TABLE I
Age and Sex Distribution of Unilateral Cleft Palate Individuals

Age	MALE			FEMALE			MALE & FEMALE Total
	Right	Left	Total	Right	Left	Total	
3	1		1				1
4				2		2	2
5		1	1		3	3	4
6	2	1	3				3
7	1	4	5	2	1	3	8
8	1	4	5	1		1	6
9		3	3		2	2	5
10		2	2	1	1	2	4
11	1	3	4		1	1	5
12	1	1	2		1	1	3
13		3	3	1			5
14		1	1		1	2	1
15		2	2				2
Total	7	25	32	7	10	17	49

TABLE II
Age and Sex Distribution of Bilateral Cleft Palate Individuals

Age	MALE	FEMALE	TOTAL
4	4		4
5	3	1	4
6	2		2
7	5	2	7
9	1	3	4
10	1	1	2
13	1	1	2
Total	17	7	24

TABLE III
Age and Sex Distribution of Non-Cleft Palate Individuals

Age	MALE	FEMALE	TOTAL
6	3	7	10
8	5	5	10
12	6	5	11
Total	14	17	31

METHOD

The standard technique employed in roentgenographic cephalometry calls for a positioning of the head in such a manner that the central axis ray passes along the right and left earposts and is, thus, perpendicular to the mid-sagittal plane of the head and the film surface. The shadows of the right and left sides are thus superimposed. With a postero-anterior film taken at right angles to the lateral film, it is possible to separate the right and left images by projection for qualitative comparison. An accurate quantitative differentiation is almost impossible, however, for the reason that the side of the jaw closer to the anode, casts a larger image than that further away and closer to the film.

To surmount some of the difficulties presented by superpositioning in standard cephalometric roentgenology, it has become accepted technique to bisect differences between the two images and measure the resulting dimensions against the image of a leaded aluminum millimeter scale, placed in the sagittal plane when the lateral exposure is made. In this manner, bilateral structures are reduced to the values of single midline structures, the dimensions of which represent the mean of the two.

The present study necessitated the use of a method that would permit either a determination of absolute size or an equal size distortion of both sides for the purpose of comparison. It was thought that this might be accomplished and superpositioning avoided at the same time by making separate exposures of the left and right sides with the head rotated to bring the lateral surface of the mandible more nearly parallel to the film. Tests with dried skulls indicated that this could be accomplished with rotations of forty five degrees to the right and left. A Thurrow head positioner permits this because the ear-rod arms are mounted on a rotating base which is independent of the film cassette. The base was accordingly mark-



FIGURE 1

Head Positioned at 45° for Oblique Projection.

ed and the markings machined, so that the ear posts could be accurately positioned for subsequent exposures. The distance and right angle relation of X-ray tube to film surface remained unchanged as well as the distance from mid-sagittal point of rotation to the film surface. This last provision was for the purpose of keeping size distortion constant. The entire arrangement is shown in fig. 1 and exposures of the left and right sides are shown in fig. 2. Exposure factors for the oblique projec-

tion have been described by Cartwright and Harvold ('54).

In order to check the accuracy of the method, exposures were made of the right and left sides of a skull rotated in the manner that was to be followed in the investigation. Direct measurements of the essential landmarks were made from the skull itself and the same measurements were made from the tracings of the X-rays of the skull. These were compared and tabulated (Table IV). It will be noted

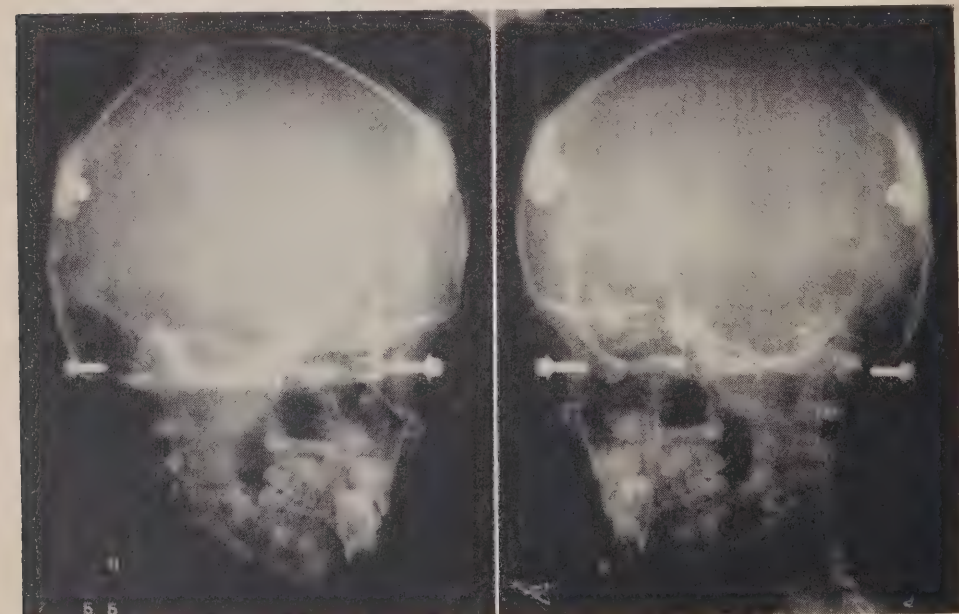


FIGURE 2

Oblique Exposures of the Right and Left Sides taken at 45°.

TABLE IV
Actual and Projection Measurements of
Mandible of Skull Placed in Thurow Positioner

Measurement	RIGHT SIDE		LEFT SIDE	
	Actual	Pro- jected	Actual	Pro- jected
Anterior Vertical Height.	28.0 mm.	28.5 mm.	28.0 mm.	28.5 mm.
Central Vertical Height.	26.0 mm.	26.5 mm.	27.0 mm.	26.5 mm.
Posterior Vertical Height.	26.0 mm.	26.5 mm.	26.0 mm.	26.5 mm.

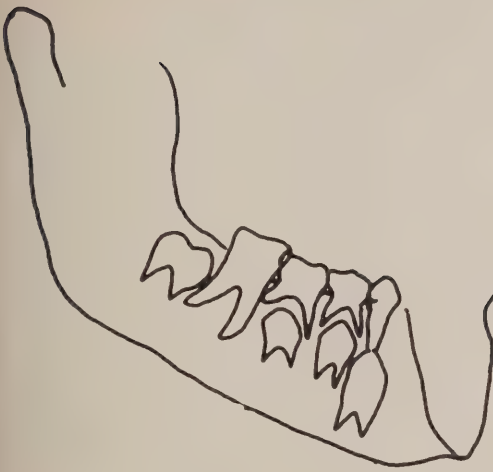


FIGURE 3

Typical Tracing made on Matte Acetate of the Oblique Cephalogram

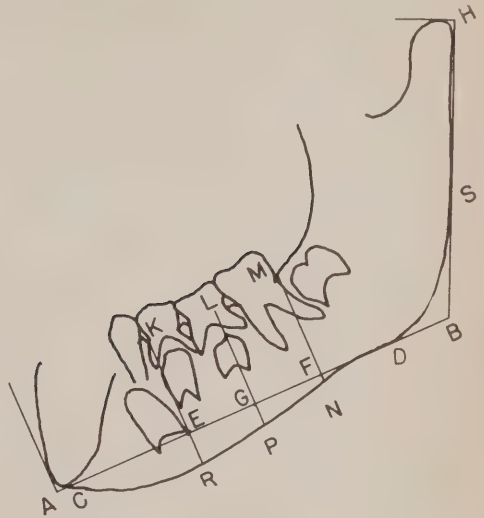


FIGURE 4

Lines and Points used to measure Vertical Bone Height.

that the measurements are very close, the largest difference being no more than 0.5 mms. and the degree of enlargement is essentially the same for the two sides.

Tracings of the X-rays of the right and left sides of the mandible and the teeth were drawn on matte acetate .004, as shown in fig. 3. A tangent "CD" (fig. 4) was drawn through two points on the lower border of the mandible, one near the angle in the back and one at the lowest point of its cross-section in front and the tangent was extended in both directions. A perpendicular was erected from the anterior end, tangential to the surface of the cross-section at "A". A tangent to the posterior surface of the ramus and condyle "HS" was drawn to intersect the tangent "CD" at "B". The line "AB" was divided into three equal segments "AE", "EF", and "FB" and perpendiculars were erected at each point as well as at "G", the mid-point of the line "AB".

In order to measure the heights at the front, middle and back of the body of the mandible, a line was drawn connecting the summits of the interproximal septa, in-

tersecting the three perpendiculars at "K", "L", and "M". These perpendiculars were extended inferiorly to intersect the

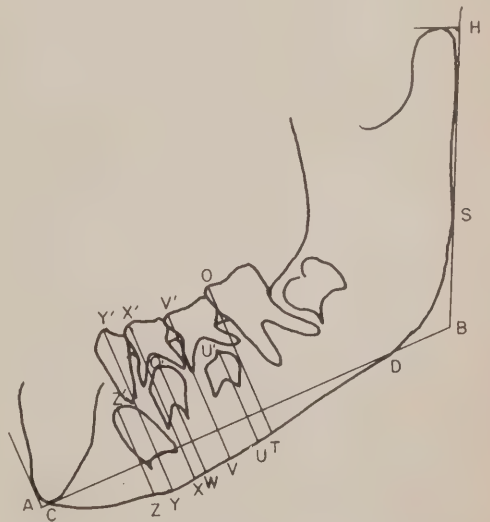


FIGURE 5

Lines and Points used to measure the level of the Teeth.

lower border at "R", "P", and "N". In a similar manner, perpendiculars to the line "AB" were dropped from the highest points of the various teeth, both deciduous and permanent (fig. 5) and continued to intersect the lower border of the mandible.

The analysis of the data was accomplished by testing for the significance of the differences between the paired left and right side dimensions. The elimination of chance as the explanation for the observed differences was accomplished by the conventional use of the "t" test (Reference p. 44, section 213, Snedecor). For non-cleft and bilateral cleft palate cases, the positive differences indicate the left side enlargement. In the unilateral cases, the differences are the result of subtracting the non-cleft side from the affected side, the affected side being designated as positive.

FINDINGS

The anterior vertical height ("RK") in the unilateral cleft palate individuals, was found to be significantly higher on the affected side than on the non-affected side (Probability less than .05 with the true difference at the 5% level of confidence lying between 0.073 and 0.807).

The vertical height at the posterior one third of the body "MN" and at the centre of the body "LP" were not found to be significantly different between the affected and non-affected sides. The vertical heights of the first permanent molar, second deciduous molar and second premolar, were not found to be significantly different when the affected and non-affected sides were compared. On the contrary, the vertical heights of the first deciduous molars, the first premolars and the deciduous and permanent canines differed significantly between the affected and non-affected sides, the affected side being higher. The probabilities for the latter differences occurring by chance were less than .05, .05, .05 respectively (Table V).

DOUBLE CLEFTS

The same areas were measured and compared statistically in the double clefts. None of the "t" values were found significant but they were high enough to suggest the existence of a difference in the vertical height of the body of the mandible in all the areas studied i.e. front, middle and back. The slight asymmetries noted between the two sides, were random and not considered significant.

NON-CLEFT PALATE INDIVIDUALS

When comparing right and left sides, the differences found were of a random nature, but the "t" values were high enough to indicate the presence of asymmetry in vertical body height of the mandible and the level of the teeth.

DISCUSSION

There has not been a great deal reported in the literature regarding mandibular body height in cleft palate individuals. Harvold ('54) has reported no asymmetry of the upper face in cleft palate individuals exclusive of the nasal and alveolar areas. It was found in this study that the anterior part of the body of the mandible in unilateral cleft palate cases, showed a statistically significant difference in bone height between affected and non-affected sides, the affected being higher. The canines and first deciduous molar areas showed a significantly higher level on the affected side than on the non-affected side. It was observed that these teeth were in the anterior region where the vertical height measurement of the body "KR" was also significantly higher. The fact that the teeth were at a higher level on the affected side would tend to indicate that it was the alveolar bone and not the underlying body of the mandible which had grown on the affected side. This might be a compensatory mechanism for the lack of occlusal tooth contact on the side of the cleft.

Asymmetry was not evident in the double cleft and non-cleft palate groups

TABLE V

Array of average individual measurements. The differences in vertical height between right and left sides of the body of the mandible and of the teeth of unilateral cleft, bilateral cleft and non-cleft palate individuals are shown.

GROUP	Sample Size	MEASUREMENTS OF THE BODY OF THE MANDIBLE			TOOTH MEASUREMENTS FROM THE LOWER BORDER OF THE MANDIBLE TO THE HIGHEST OCCLUSAL LEVEL OF THE TOOTH						
		Anterior Vertical Height (1/3 AB from A)	Posterior Vertical Height (1/3 AB from B)	Middle Vertical Height (1/2 AB)	Vertical Height of the First Permanent Molar	Vertical Height of the Second Deciduous Molar	Vertical Height of the Second Bicuspid	Vertical Height of the First Deciduous Molar	Vertical Height of the First Bicuspid	Vertical Height of the Deciduous Canine	Vertical Height of the Permanent Canine
UNILATERAL CLEFTS Affected side (left) minus non-affected side (right)	36	* † .361-.191	† .058-.258	.180-.256	.109-.279	.210-.219	.344-.190	† .750-.228	.014-.198	† 1.265-.371	† .562-.236
UNILATERAL CLEFTS Affected side (right) minus non-affected side (left)	13	† .643-.496	† .583-.361	.607-.363	† .571-.164	† .625-.118	.400-.281	† .562-.225	.227-.273	† 1.714-.733	† .423-.116
UNILATERAL CLEFTS POOLED Affected minus non-affected sides	49	† .440-.183	† .195-.213	.300-.210	.250-.202	.333-.190	† .358-.158	† .687-.167	.066-.161	† 1.395-.279	† .522-.184
BILATERAL CLEFTS Left minus right	24	.312-.234	.068-.261	.333-.273	.090-.279	.178-.354	.178-.279	-.125-.431	-.052-.300		.047-.279
NON-CLEFT PALATE CASES Left minus right	31	-.018-.241	.293-.216	.370-.181	.096-.178	.400-.246	.021-.230	.357-.230	.089-.175	.281-.276	.001-.262

* Average Difference and Standard error of difference. The probability of the observed average difference being zero is less than 0.05

† Significant Values

in this region. In these groups, there was a slight tendency for the vertical height of the left side of the body of the mandible to be greater than the right, in most of the areas studied (Table V). This seems to support Todd's ('29) conclusions regarding growth of the face and cranium. He stated, "Growth of the face comprises increase in dimensions, unequal in extent and non-synchronous in time."

SUMMARY

The purpose of this study was to compare vertical mandibular body height and occlusal height of the teeth in unilateral cleft, double cleft and non-cleft palate patients. The right and left sides of each individual were compared in forty-nine unilateral clefts, twenty-four double clefts and thirty-one non-cleft individuals. Oblique cephalometric headplates were used which allowed a comparison to be made of the right and left sides. The body of the mandible was arbitrarily divided into three areas, anterior, middle and posterior, and these were measured and compared. Also studied were the occlusal height of the first permanent molar, first and second deciduous molars, first and second premolars, deciduous and permanent canines. These were measured from the lower border of the mandible to the highest point of the tooth.

CONCLUSIONS

1. In the unilateral cleft palate individuals, the anterior area of the mandible on the cleft side is significantly greater in height than the anterior area of the mandible on the non-cleft side.

2. The level of the teeth in the anterior area of the mandible, i.e., the first deciduous molar, first premolar and canine, is higher on the cleft side than on the non-cleft side.

3. True symmetry was not found in any individual.

4. Lack of occlusal function of the teeth does not adversely affect the vertical development of the mandible provided there are teeth present.

REFERENCES

1. BAKER, L. W.—1911. A Preliminary Study of the Influence of the Forces of Occlusion on the Development of the Bones of the Skull. *Dental Items of Interest* 33: 110.
2. BAKER, L. W.—1922. The Influence of the Forces of Occlusion on the Development of the Bones of the Skull — *International Journal of Orthodontia*, 8: 259.
3. BATTERSBY, J.—1936. Ectodermal Dysplasia with Complete Anodontia. *D. Mag. and Oral Topics*, 53: 427.
4. BOX, H. K.—1940. *Twelve Periodontal Studies*. Toronto University, University of Toronto Press.
5. BRASH, J. C.—1924. The Growth of the Jaws and Palate — *Dental Board of the United Kingdom*, London.
6. BROADBENT, B. H.—1931. A New X-Ray Technique and Its Application to Orthodontia. *Angle Orthodontist*, 1: 45.
7. BRODIE, A. G.—1941. On the Growth Pattern of the Human Head from the Third Month to the Eighth Year of Life. *American Journal of Anatomy*, 68: 209.
8. CARTWRIGHT AND HARVOLD—1954. Improved Radiographic Results in Cephalometry through the Use of High Kilovoltage. *Journal Canadian Dental Assoc.* 20: 261.
9. FRIEL, SHELDON—1928. Further Investigations Concerning Muscles and Their Relation to the Growth of the Jaws. *The Dental Record*, 48: 343.
10. HARVOLD, E.—1954. Morphologic Studies of the Facial Skeleton. *American Journal of Orthodontics*, 40: 493.
11. HARVOLD, E.—1954. A Roentgen Study of the Postnatal Morphogenesis of the Facial Skeleton in Cleft Palate. *Anatomical Institute, University of Oslo, Dept. of Anthropology and Norwegian State Dental School*.
12. HOPRATH, H.—1931. Bedeutung der Roentgenfernung—Und Abstandaufnahme für die Diagnostik der Kieferanomalien. *Fortschr. der Orthod.* 1: 232.
13. HUNTER, JOHN—1778. *The Natural History of the Human Teeth*. London.
14. IVY, F. H.—1939. A Case of Non-Eruption of the Entire Permanent Denture. *The Dental Cosmos*, 75: 689.
15. KRONFELD, R.—1939. *Histopathology of the Teeth and Their Surrounding Structures*. Ed. 2, Philadelphia, Lea and Febiger.
16. KUHLÖ, F.—1932. Ein Fall von Anodontie (Beitrag zum Kapitel Überzahl Und Unterzahl der Zahna). *Ztschr. f. Stomatol.* 30: 100.
17. MURRAY, P. D. F. and HUXLEY, J. S.—1925. Self Differentiation in the Grafted Limb-Bud of the Chick. *Journal of Anatomy*, 59: 379.
18. NOYES, F. B.—1913. The Development of the Teeth and Occlusion as Factors in the Development of Facial Bones. *The Dental Cosmos*, 55: 117.
19. RUSHTON, W.—1904. The Total Absence of Dentition in a Boy Aged 16. *Tr. Odontol. Soc. Great Britain*, 36: No. 7, 1904.
20. SARNAT, E. G. and BRODIE, A. G.—1942. Ectodermal Dysplasia (Anhidrotic Type) with complete Anodontia: Serial Roentgenographic Cephalometric Appraisal. *American Journal Dis. Child*, 64: 1046.
21. STILLMAN, P. R. and McCall, J. O.—1937. *A Textbook of Clinical Periodontia*. Ed. 2. The MacMillan Co., New York.
22. THOMA, K. H.—1938. Principal Factors Controlling Development of Mandible and Maxilla. *Am. J. Ortho. and Oral Surg.* 24: 171.
23. TODD, T. W.—1929. Recent Studies in the Development of the Face. *Int. J. Ortho. and Oral Surg.* 15: 1137.
24. WALLACE, J. S.—1903. *Physiology of Mastication and Kindred Studies*. London J. & A. Churchill Ltd.
25. WALLACE, J. S.—1927. Variations in the Form of the Jaws with Special Reference to the Etiology and their Relation to the Occlusion of the Dental Arches. *London Bailliere & Cox*.
26. WATT AND WILLIAMS—1951. The Effects of the Physical Consistency of Food on the Growth and Development of the Mandible and Maxilla of the Rat. *American Journal of Orthodontics*, 37: 895.

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1474 Bathurst St.

The University and You

WILLIAM W. BRESLIN, D.D.S.,* Toronto.

For some years, the Universities have suffered from a very poor press. This may have been due to two sets of circumstances, very unrelated. In the first place, lack of public relations officers and the cost of promotion, weighed heavily against the Universities. In the second place, news concerning the poverty of the Universities, could hardly stimulate reader interest to the extent of bank holdups or murders. However recent months have witnessed a change in attitude, the plight of the Universities having become big news worthy of space on the front pages, and in the editorial columns. The concern has been general, affecting every Canadian household, and every facet of Canadian industry and professional life. Governments and political parties have been in agreement on the need of supporting the institutions of higher learning, and assisting financially students who indicate a desire to enter a University.

During a period that Canada experienced the greatest industrial and economic development in its history, the Universities failed to keep pace with this expansion, and did not enjoy the fruits of this prosperity. They accepted tremendous enrolments of students, whose education had been interrupted by war, teaching them in many instances, in makeshift quarters away from the campus. In contrast to the building boom of business, and the extravagant expenditures on plant and equipment, the Universities had to maintain their equilibrium on a fixed budget,

and against a rising cost of operation. They experienced difficulty in retaining staff against the inducements being offered by industry and finance. The difficulties were general among all Universities, but the provincial schools like the University of Toronto felt the pinch even more greatly.

While the University of Toronto was founded over a hundred years ago, its Alumni Association was a creation of recent times. Starting as a Federation of Alumni of many faculties and colleges about thirty-five years ago, it attempted to stimulate some interest in its graduate body for the University of Toronto. Over the years it published the University magazine, kept the records, assisted faculty and college associations, arranged the graduate program, administered the loan funds and bursaries, managed central office, serviced the branches, and made joint appeals for annual donations for bursary and loan funds. When it seemed that the University of Toronto Alumni Association was in conflict with some of the other faculty associations, the Board of Directors requested the president of the University to appoint a committee to study, examine and survey the manner in which the parent organization could function in the best interests of all concerned. The Chancellor's Committee after deliberations of over two years, made the recommendations which were adopted at the annual meeting of the University of Toronto Alumni Association on January 31st, 1958. A new Board composed of representatives of every faculty and college alumni association was creat-

* President of the University of Toronto Alumni Association.

ed, the officers being elected from among themselves.

The University of Toronto has shown a readiness to implement the Chancellor's Report, assuming the responsibility for publishing the magazines, keeping the records, and the accounts. The University of Toronto Alumni Association has retained the management of around \$150,000.00 in trust funds for student loans and bursaries, the servicing of branches and constituent alumni associations, and the launching of the annual appeals for the Alumni Fund.

Because the University of Toronto is a provincially supported institution, the 70,000 graduates may feel no financial responsibility towards it, believing they have paid their way in tuition fees, or by taxation of the various governments. Few are aware that the University has expended from \$5,000 to \$6,000 on every graduate who has obtained a degree. Where private schools may appeal to their alumni on the basis of loyalty, because of its provincial nature, the University of Toronto does not enjoy the same advantage. The annual appeals provide a common vehicle through which a graduate may assist his alma mater and his faculty.

The Dental Alumni Association as a component part came into existence eleven years ago. It grew very rapidly until it could boast a membership of 35% of its entire graduate body. It worked very closely with the University of Toronto Alumni Association, participating in

all of the activities, especially the joint appeal for bursary funds. It established interest in the dental profession for the need of a new Dental Building. It assisted students by annual bursaries on admission. It has extended its program to include a loan fund for needy students. It has decided to use a portion of the money obtained in the 1958 campaign for this purpose, placing the balance of the Dental Alumni portion in the bursary fund.

Since its inception, the Dental Alumni has interested itself in the student body. It has made the profession aware of its responsibility towards the University by stimulating interest in the Senate elections. Through their Senate representatives, they have had a part in the deliberations of the Board of Dental Studies. They have had a direct representation through the same members, on the Committee for Election of the Chancellor.

The administrators of the Trust Funds of the University of Toronto Alumni Association, have reported a greater demand for assistance in the last three months, than was requested in the last four years. If this would indicate a trend, then more applications for loans may be anticipated this fall. The greater cost of dental education may be a deterrent to some students to register in dentistry. It is the hope of the Dental Alumni Association that the response to the 1958 appeal may be so general, that the program intended for the immediate expansion will not be delayed.

Scientific and Sociology. Factual, that is, scientific education on the nature of man seems necessary for the future of man. Such education includes the scientific evidence of the unity of the human race. Despite so-called racial differences in such minor details as skin colour, language, and religions, science has proved that the people now living on our earth are one species. This fact, understood and accepted by all sane citizens, should gradually eliminate racial prejudice, fear and hate. It should promote cooperation in place of violence. Basic to the achievement of freedom from fear, want, and violence is the freedom to know. *Anton J. Carlson, Science, 117:701, 1953.*

Toronto Announces Plans for New Dental Building

Construction will begin immediately on one of the most modern dental teaching units in the world following award of the contract for the University of Toronto Dental building to the Foundation Company of Canada Limited.

Total cost of the project will be close to \$6 million, including \$700,000 for the land; \$1 million for scientific and clinical equipment, more than half of which is for dental operating units; \$900,000 for other laboratory and office furnishings and equipment; architects' fees and other expenses.

The building will cover the whole central city block bounded by Elm, Chestnut, Edward and Centre Streets, and demolition in the area has already been completed. The five-storey modern brick building designed by Allward and Gouinlock will be ready, it is hoped, for occupancy by the Fall of 1959.

Facilities will provide for an ultimate undergraduate enrolment of 725 compared with 417 this year, and the number of

graduate students will be increased.

Use of the new building will fulfill the recommendations made in the Report of the Ontario Survey Commission (1950) which called for a minimum of 120 dentistry graduates each year in the province.

In a statement on projected enrolment, Dr. Roy G. Ellis, Dean of the Faculty of Dentistry, predicts a graduate class of 125 by 1963. By 1966-67 the Faculty is expected to reach its maximum enrolment of 725 undergraduates, made up of 125 in the preprofessional and each of the four dental years, and 50 in both years of the dental hygiene course.

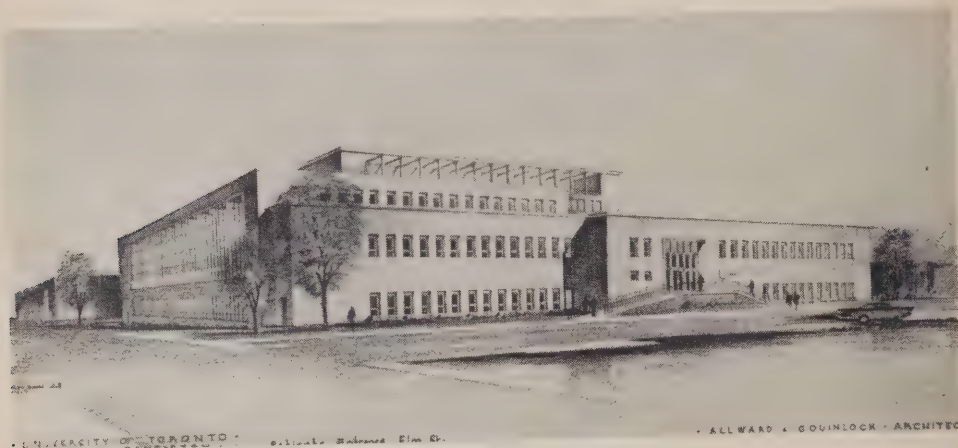
Training of the increased number of graduates should help to rectify the extreme shortage of dentists in Canada, which has one dentist to 2,934 residents, compared to one dentist to 1,671 in the United States, and one to 1,700 in Sweden. Graduating dentists in 1957 per million of population numbered 11 in Canada, 19 in the U.S. and 38 in Sweden. In this country,



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SCHOOL OF DENTISTRY

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the ratio of dentists to population has steadily decreased over the past five years.

The maximum number any dental school can graduate and still maintain standards is approximately 125, Dean Ellis said. In his opinion, when more dentists are needed, consideration will have to be given to establishing another dental school in Canada.

Floor space of 103,300 square feet will be available for teaching and research in the new building. Plans show one lecture room large enough to hold three classes (375 students); two others, each to seat 125; also clinical teaching facilities, biological science laboratories, combined lecture room and laboratory for dental hygienists, seminar rooms, graduate clinics, pre-clinical technique laboratories, student common room and library, both overlooking a quadrangle; museum, visual aid department, administrative and departmental offices, and accommodation for animals and research laboratories on the fourth and fifth floors.

In keeping with modern trends in education, the Dental building will be equipped with facilities for closed circuit telecasting. This medium will be used for demonstrations, but not for lectures. At present an operating procedure must be repeated on from eight to ten patients to

small groups to enable each student to see it clearly. With the use of television, one such demonstration shown on a 21-inch screen can instruct a large class.

The faculty clinics now treat 5,000 adults and children annually, and records show 22,000 patients treated over the last ten years. Clinical treatment, at present given during the school term, will be carried on eleven months of the year.

Patients will no longer have to climb three flights of stairs, but will proceed from the Elm Street lobby by ramps down to one of the three clinics or the surgery, or up to the main clinic. The latter, two storeys high to provide ample light and ventilation, has 125 dental chairs, one for each senior student. Here, a new method of training will be introduced for students in their earlier years who will practice on metal models which can be attached in a normal operating position to regular dental chairs instead of on models attached to benches.

In a 62-chair clinic for third year students, each chair will be used by two students, who, working alternately, will keep the chairs busy all day.

The children's clinic on the ground floor will have 32 chairs. Considerable attention will be given to children, particularly in the field of preventive dentistry.

ONTARIO DENTAL ASSOCIATION CONVENTION

ROYAL YORK HOTEL, TORONTO

May 18th—21st, 1958

ESSAYISTS:

Dr. Allen G. Donner, Assistant Professor of Oral Diagnosis, Northwestern University—
"Oral Diagnosis".

Dr. W. G. McIntosh, Associate Professor of Periodontology, Faculty of Dentistry, University of Toronto—
"Suggestions for Periodontal Service by the General Practitioner".

Dr. E. Dale Trout, Consulting Radiation Physicist, General Electric Company, Milwaukee—
"X-Ray Protection for the Dentist and his Patients".

Group Clinicians:

Dr. Allen G. Donner, Chicago—
"Oral Diagnosis".

Dr. John J. McCarthy, Montreal—
"Aids to the General Practitioner in Surgical Aspects of Dentistry".

Dr. Donald S. Moore, Hamilton—
"Periodontics for the General Practitioner".

Dr. George Morgan, Toronto } *"X-Ray Interpretation as*
Dr. Donald Teskey, Toronto } *it applies to Surgical*
Dr. Graydon Hancock, Toronto } *Procedures"*.

Dr. George Hare, Toronto—
"Problems Associated with the Removal of Vital Pulp".

Dr. Floyd A. Peyton, Ann Arbor—
"Current Developments in Rotary Tooth Cutting Instruments".

Dr. A. Alfred Nelson, Royal Oak—
"Bread and Butter Denture Service".

Dr. George A. Brass, Edmonton—
"Amalgams".

Mr. Charles Brownell, Rochester—
"Intra-Oral Photography".

Dr. Samuel W. Leslie, Toronto—
"Drugs Useful in Dental Medicine".

Dr. J. Pepper, Toronto—
"The Fractured Anterior".

Dr. Lorne E. Riddolls, Toronto—
"Anterior Crossbites".

Dr. A. Bruce Hord, Toronto—
"Silicates and Acrylics".

Dr. P. G. Anderson, Toronto—
"Rubber Base and Silicone Impression Materials in Operative Dentistry".

Dr. Frank Martin, Toronto—
"Operative Procedures in Crown and Bridge Prosthesis".

Royal Canadian Dental Corps

Lt-Col A. T. Roger—
"Surgical Preparations for Oral Prosthesis".

Lt-Col G. C. Evans—
"Auto-curing Acrylics for Aesthetics and Space Maintenance Bridgework".

Dental Public Health Committee

Professor George Tait, Toronto—
"Are You Satisfied with Your Patient Relations?"

Torontonensis Wanted by Toronto Faculty Library

To complete its files the Faculty of Dentistry, University of Toronto is badly in need of copies of "Torontonensis" for the years 1948 and 1949. Anyone having copies of these issues which he is willing to sell or donate please communicate with **Dr. J. H. Johnson, Librarian, Faculty of Dentistry, 230 College Street, Toronto 2B, Ontario.**

ABSTRACTS

Bleaching of the Discoloured Pulpless Tooth

H. H. PEARSON, D.D.S., Montreal

Bleaching of a pulpless tooth should be undertaken only after the health of the root and periapical tissues has been restored and the canal has been hermetically sealed.

1. The tooth is thoroughly sealed and polished.

2. A coating of petroleum jelly is applied to the labial and lingual gingival tissue investing the discoloured tooth and its two approximating teeth, under the free gingival margins and in the interproximal spaces.

3. The rubber dam is punched with the smallest hole possible and is applied and held in place by means of a double winding of dental floss, double knotted under the gingiva, as far as it will go into the gingival crevice without causing trauma.

4. All filling material and decay are removed, as well as the contents of the pulp chamber. The canal is voided of its contents to a depth 3 mm. apically to the gingival level.

5. All the exposed tooth tissue is washed with chlorinated soda solution, some of which is allowed to remain in the cavities for about one minute and then washed

away with warm distilled water, and the tooth is dried. Care should be taken to wash away all vestiges of the petroleum jelly from the surface of the tooth. A mixture of one part ethyl alcohol, 95 per cent by volume, and two parts chloroform, chemically pure, is used to desiccate all the exposed enamel and dentine. This is allowed to remain in the cavities for two minutes and is aspirated using a "sealed to the tooth" aspirator tip.

6. An ether-peroxide mixture (Pyrozone) is used as the bleaching agent. A pellet of cotton is placed in the pulp chamber and the cavity and is saturated with the ether-peroxide mixture by means of a curved glass dropper. The solution is then forced into the dentine by using a pump which is composed of a soft rubber polishing cup mounted on a porte-polisher. The cotton may be saturated several times, and the pumping may be repeated with the rim of the cup resting on the enamel beyond the cavity margins.

7. The tooth is covered with a strip of muslin or cotton dental napkin cut to fit the entire labial and lingual surfaces, and the tail end is tucked into the cavity to meet the cotton pellet that was placed in the pulp chamber. The muslin and the

cotton pellet are saturated with the ether-peroxide mixture, with the muslin acting as a wick.

8. The patient's face is covered with a wet towel for protection from the rays of the bleaching lamp, a No. 2 photoflood lamp, which is held about 20 inches from the tooth. The cotton is repeatedly replenished with the ether-peroxide mixture about every five minutes or as it evaporates. This process usually takes about 20 minutes.

9. The muslin strip and the remaining pellet of cotton are removed and the cavities are dried by a blast of warm air. A dressing of 30 per cent hydrogen peroxide in water is placed in the pulp chamber, and all cavities are sealed with a white oxyphosphate of zinc cement. The oxygen from the dressing will attempt to force its way through the setting cement and will cause a leaky filling unless the cement is covered by a piece of rubber dam or a plastic strip held in place by finger pressure until the cement is set. After the cement sets and just before the rubber dam is removed, the tooth is given a fresh coat of petroleum jelly to seal the enamel temporarily. Then the first treatment is completed. Three days should elapse before the second treatment.

10. At the second or subsequent sittings, the rubber dam is applied as de-

scribed previously. The tooth is cleaned of petroleum jelly and other deposits by using prophylactic polishing paste; then it is washed and desiccated with the alcohol-chloroform mixture. The filling material is removed, and the bleaching process is repeated until the tooth becomes perceptibly lighter in colour than is required. At the last sitting, the rubber dam must not be removed until all the dentine and enamel surfaces are hermetically sealed, as follows:

11. All the exposed enamel and dentine on the labial and lingual surfaces and the walls of the cavities and pulp chamber are painted with a self-curing acrylic resin monomer; a camel's-hair brush is used for this purpose. Several coats are applied, each after the last has been absorbed. The tooth is exposed to the photoflood lamp for five minutes. The lamp is turned off, and the brush technique is used in filling the enamel and pulp chamber with a light shade of self-curing filling acrylic resin. The tooth is exposed to the photoflood lamp again for eight minutes to complete polymerization of the acrylic resin monomer as well as of the filling proper.

12. Retention points are prepared in all the cavities which then are filled with a synthetic porcelain.

The Journal of the American Dental Assoc.
Vol. 56, No. 1, January 1958.

Tissue Response to Ultrasonic Applications on Deciduous and Developing Monkey Teeth

JAMES R. JENSEN, D.D.S., M.S.D. and ROBERT E. SAUSEN, D.D.S., M.S.D.

The Cavitron ultrasonic cutting instrument was used with the recommended technique for a thirty-second application to the incisal or occlusal surfaces of the deciduous teeth and the first permanent

molars of three young monkeys. The animals were sacrificed at periods of two days, two weeks and one month. Histologic specimens were prepared, with sections passing through these teeth and all

surrounding dental tissues. The following conclusions are based on the results of this experiment.

Sufficient thermogenesis occurs in surrounding tissue after twenty-five seconds to be felt by the operator.

No postoperative changes in the gross appearance of the dental tissues were observed.

Gingiva, deeper jaw bone and nerve trunks were not altered morphologically.

Early inflammation occurring in the periodontal ligament, alveolar bone, and periosteum disappeared before the termination of the experiment.

Odontoblasts within tooth buds apparently were unaffected; however, an in-

creasing hyperaemia occurred with them.

No normal pulp tissue was found in teeth directly contacted by the instrument, and smaller teeth demonstrated greater injury.

Injured odontoblasts of operated teeth recovered within one month, but these pulps showed an increasing amount of blood stasis and chronic inflammatory hyperaemia.

The ultimate disposition of pulp tissue in operated deciduous teeth must be studied at postoperative time intervals of six months or longer before final judgment can be rendered.

North-West Dentistry
Vol. 36, No. 5, September 1957.

Treatment of Teeth with Exposed Vital Pulpal Tissue

WILLIAM F. VIA, Jr., D.D.S., M.S.

A review of the literature of the past 20 years concerned with vital pulp therapy yields certain valuable information regarding the treatment of teeth with exposed vital pulpal tissue. The ability of healthy pulpal tissue to heal following exposure has been confirmed. Evidence has been presented which supports the contention that healthy pulpal tissue will heal following exposure and treatment by a host of different materials. The selection of the various pulp capping materials was done largely upon an empirical basis.

The inability to diagnose the extent of degeneration of the pulpal tissue in a given tooth, is the major cause of the high percentage of failures reported in teeth treated by the vital pulpotomy technique. Analysis of the diagnostic signs of pulp degeneration reveals that size of area of exposure, amount of haemorrhage, previous pain, thermal or electric pulp testing, and roentgenographic evidence of periapical infection are unreli-

able in determining the extent of pupal damage. It can be safely stated, however, that the pulp of any tooth that has spontaneously become painful or exhibits roentgenographic evidence of carious exposure with an area of secondary calcification adjacent to but separated from the exposure site will completely degenerate with or without treatment.

The key to the eventual solution of the vital exposed pulp problem seems to be a complete understanding of the physiology and pathology of the pulpal tissue. When the process of injury and repair of pulpal tissue is thoroughly understood, it may be possible to develop diagnostic and treatment methods that will insure a greater degree of success in vital pulp therapy. Until this investigational work is completed and applied, the operator using present empirical methods, will be faced with a greater than 50% mortality rate among the treated teeth.

The Journal of the Michigan State Dental Assoc.
Vol. 39, No. 10, October 1957

EDITORIAL

The Journal and the Lay Press

The interpretation which the lay press places upon articles appearing in scientific journals is often a matter for concern. A similar problem pertains when the press attempts in a relatively few words to report upon an address which may have taken some time to deliver. Of necessity, remarks are removed from their context and without the qualifying words or phrases are often subject to misinterpretation by the reader.

We have had a few expressions of concern from readers in view of the fact that a newspaper reported on an article which appeared in our February issue. Because the newspaper reporter conveyed a thought or an idea not apparently supported by a majority in the profession, issue has been taken with the Journal that the article should not have been published unless there was assurance it was not available for newspaper use.

Apparently it is not recognized that the Journal of the Canadian Dental Association, similar to all professional journals, is a public document, and as such is available for any legal use to which it can be put. Several popular magazines such as *Time* and *Newsweek* derive much of their material in the health field from professional journals. Realizing, therefore, that once the journal is published the profession can no longer exert authority over its contents, how circumscribed should an editor regard himself in respect to the

admissibility of articles to the pages of the Journal?

Obviously some contend that no contentious expression of opinion should be permitted to consume the pages of the Journal. The editor does not share this view. Progress has never been achieved through platitudinous acquiescence to existing thoughts or ideas. We do not stand still. If we fail to progress then we regress.

It is undoubtedly true that it is possible for a contributor to a journal to suggest methods or philosophies, which if adopted, would not enhance the profession, but surely even such commentary as this can serve only to lend assurance and support to more popularly held views. There is merit on occasion, to the outpourings of the devil's advocate.

The paper referred to in the February issue was not, however, of this latter variety. It was a well prepared commentary based on reasonable experience with a relatively new method of performing tooth preparations. It was the author's contention that the impact of ultra high speed equipment would necessitate certain fundamental alterations to many presently pertaining concepts. And he may be right. The editor, unfortunately is not sufficiently clairvoyant to know with assuredness but he is prone to the persuasiveness of many dentists employing ultra high speed who regard this develop-

ment as a major technical advance in dentistry. A paper gracing the pages of the March issue, likens the acquisition of this equipment to the impact of the X-ray machine on the practice of dentistry.

Whether the editor agrees with the point of view expressed is neither important nor germane. While he will not knowingly permit a paper to be published which is based upon inaccurate or contrived information, he does, however, believe that an author should be allowed reasonable latitude to express his views or contentions even though there is the ever-present possibility that these thoughts may be employed by others, in a manner which might be considered prejudicial to the best interests of the profession. This, he regards, is one of the occupational hazards of writing.

We are not particularly concerned that

our point of view may not be shared by some others. What bothers us much more is the thought there are members of the profession who feel that dentistry is insufficiently mature or secure to withstand, on occasion, publicity which might be regarded as detrimental. Life, after all, is not all hearts and flowers, and sometimes we gain more from our adversities than we do from our successes. Also news items are short-lived. What is important today fades into obscurity tomorrow.

To emasculate our publication, journalistically speaking, in deference to a possibility of misuse or misinterpretation by the popular press is an untenable proposition. It is our sincere hope that the Journal may always be employed as a vehicle for new ideas, philosophies, or opinions and that it will not be circumscribed by any considerations other than the merits of the material it publishes.

What's in a Name?

Recently we had the pleasant experience of receiving the first academic calendar of the Faculty of Dentistry of the University of Manitoba. This school has been well and truly conceived, and is enjoying a flourishing period of gestation in readiness for its parturition, September next. The great care by which the various plans have been laid assures the development of a school for which Manitoba and Canada can be proud. Eventually the graduates of this faculty will take their places beside their colleagues from the other Canadian schools, to provide the best in dental care for the people of our country. Only one aspect of the presently adopted plans gives us cause for disagreement.

All five Canadian dental schools confer

the D.D.S. degree upon their graduates. With few exceptions the American schools also provide for this degree. It is the presently applicable policy of the Manitoba faculty to confer the D.M.D. degree upon those who successfully complete the course of study.

Within the past few years two excellent reports on the establishment of faculties of dentistry have been prepared, one for the University of British Columbia, the other for the University of Manitoba. Both reports recommended the provision of the D.M.D. degree in preference to the D.D.S. It was contended that the development of dentistry in respect to fundamental preventive concepts, which concepts embrace the broad spectrum of research,

necessitated a degree which did not indicate a predilection with treatment as the term surgery implies. There is some veracity to the argument. However there is also another aspect which should receive consideration.

Even today, there is confusion or a lack of familiarity on the part of the public with the degree of D.D.S. If anyone doubts that statement let him select a number of people at random and ask them what degree a dentist employs after his name. To compound the confusion by creating a new degree to designate dentists would, we are convinced, be more harmful than retaining the present degree with its etymological circumscription.

Admittedly there are a few dentists, particularly in coastal provinces, possessing the D.M.D. degree from an American school, but the number is relatively small and is being augmented only as a graduate of such a school seeks registration in a Canadian province. It will be an entirely different matter however, when approximately thirty graduates each year, go forth from one school to be assimilated into the profession, presumably in a reasonably defined geographic area. We can visualize, without too much difficulty, the countless questions which will arise in re-

spect to the "differences" between the dentist possessing the D.D.S. and the one with the D.M.D.

While it is quite true that just because something has been done for years it is no real justification for continuing, nevertheless such changes should be considered in the light of all the circumstances. We believe that such a decision as this should not be taken unilaterally but, if the proposition is sound, should be adopted by all schools so that eventually uniformity will result. To our knowledge the Council on Dental Education has never offered an observation on this matter. Perhaps, in view of the circumstances, it should.

We wonder if both points of view could not be satisfied with a change in appellation rather than an alteration to the designating letters. If the D.D.S. designation were to indicate a Doctor of Dental Science degree both the preventive and treatment phases of dentistry would be included.

Perhaps there is not much in a name but we feel it is a matter which should be conscientiously considered by the University of Manitoba while the conferring of its dental degree is still several years in the future. Once the degree is presented it will be difficult to effect a change.

THE LIBRARY

Additions

BRECKER, S. C.: Clinical procedures in occlusal rehabilitation. 1958. 326 p. illus.

BURNETT, H. W.: Oral microbiology and infectious disease; a textbook for students and practitioners in dentistry, 1957. 589 p. illus.

LANDY, C.: Full dentures; the postgraduate dental lecture series. 1958. 182 p. illus.

OSTLUND, S. G.: The effect of complete dentures on the gum tissues; a histological and histopathological investigation. Pub. in Acta Odontologica Scandinavica. Vol. 16; 1958. 40 p. illus.

SHAW, S. I.: Clinical applications of hypnosis in dentistry. 1958. 173 p. illus.

SOUTHWOOD, S.: A dentist's compendium. 1957. 87 p. illus.

STREAN, L. P.: Cortisone in dentistry. 1957. 178 p. illus.

CORRESPONDENCE

Contra-Indications Minimal With High Speed

To the Editor:

The article by Dr. Purves on ultra highspeed and its impact upon the Dental Profession (J.C.-D.A. Feb./58) is a very timely one, particularly in its economic implications.

However, I do feel that with increased use of ultra highspeed its contra-indications will decrease.

In our office, we have used the air-turbine handpiece right alongside a pulley driven ultra highspeed handpiece. The pulley driven handpiece was used for eighteen months and the air-turbine as far back as February, 1957.

It was found that a tactile sense could be developed after a certain amount of experience, and that direct vision is not always essential for precise cutting. Special mirrors are now available that flow air over the surface of the mirror that aids visibility in the disto-buccal corners of the mouth.

With a small round No. 2 bur, or the inverted cone 331½ or 34, a class III for gold foil or silicate can be prepared at ultra highspeed provided the instruments are running concentrically. We have found that the tongue can be effectively retracted for the lingual molar cavities with the use of rubberdam. Of course we also use power suction to eliminate the water problem and the air-turbine to prepare these cavities. There are other aids to retract the tongue and cheek (successfully) such as special saliva ejectors.

We have found we have further effected a decrease in the use of local anaesthetic for class V cavities with the use of warm water as a coolant. The denture will tolerate temperatures of 85 to 110 degrees. As the operator develops control of applied pressure, it enhances the tactile sense, and it is possible and easy, to remove soft decay at ultra highspeed with a No. 6 round bur.

Why suddenly introduce a vibratory speed when ultra highspeed gives the patient greater comfort?

For these reasons I feel the contra indications for use of ultra highspeed tremendously reduced. About the only task not performed at ultra high-speed is prophylaxis. The adjustment of pressure control will increase the life of the air turbine and permit the use of diamond instruments of special particle size, since the diamond instrument

cuts with greater comfort for the patient, and leaves a smoother preparation than that left by a cross-cut fissure bur.

Gordon S. Anker, D.D.S., Toronto.

Suggests Health Insurance Alternative

To the Editor:

I read with interest the article in the February issue of the Journal of the Canadian Dental Association, entitled "Health Insurance — Where Do We Stand?", by Dr. D. W. Gullett.

The advance of socialism is deplorable, but it is obvious that the people intend to force the government into an ever-larger give-away programme. The problem remaining, which concerns us, is how the government will provide health care to the nation.

The government could easily provide free health services simply by mailing a monthly cheque for health care to the families of the nation. Such a system would be simple, effective and not destructive. Has any consideration been given to such a method for solving this problem? The few cases, of people suffering extreme hardship, could be given special consideration, and handled by a board for that purpose.

In the "Old Age Pension" scheme, the government does not get involved with all the merchants of the nation, who supply these elderly people with fuel, food and clothing.

Regarding health care, the government might necessarily become involved with the hospitals, for it already makes large grants-in-aid to these institutions. However, to direct and pay all the personnel involved in health care seems costly and difficult, and also unnecessary. Such course of action would probably please no one.

As a side effect, if people are allowed to handle the money themselves, it is quite likely that a lot of imaginary illnesses will disappear, since better use can be found for the money than curing imaginary ailments. Some improvement in the crowded state of our hospitals might thus be achieved.

Though imperfect, it would indeed be unfortunate to have our present health service replaced by an inferior system.

G. W. Willmott, D.D.S., Strathroy, Ontario.

STATISTICAL DATA re DENTISTS IN CANADA

Reported by Provincial Registrars as of January 1958

TABLE I
DENTISTS PRACTISING IN CANADA

Province	Number of Dentists			Changes during 1957				* Total Related to 1938	† Ratio to Population
	Male	Female	Total	Deaths	Retirements	Additions	Re-located		
Nfld.	39	2	41	2	0	5	2	+ 22	1/10,390
P.E.I.	34	0	34	0	0	2	2	+ 4	1/2,913
N.S.	188	3	191	2	3	7	4	+ 22	1/3,675
N.B.	124	1	125	0	2	4	0	+ 15	1/4,520
P.Q.	1,303	3	1,306	15	15	49	3	+ 432	1/3,643
Ont.	2,329	41	2,370	33	24	103	10	+ 438	1/2,372
Man.	244	2	246	8	3	19	7	— 5	1/3,496
Sask.	207	2	209	4	0	7	5	— 1	1/4,206
Alta.	406	6	412	3	0	29	9	+ 176	1/2,816
B.C.	623	7	630	4	8	27	2	+ 268	1/2,360
Total	5,497	67	5,564	71	55	252	44	+ 1,371	1/2981

* These figures show the increase or decrease in number of dentists today, compared with 1938.

† Based on population figures as of June 1, 1957, provided by Dominion Bureau of Statistics.

TABLE II
RELOCATION OF CANADIAN DENTISTS DURING 1957

To	Nfld.	P.E.I.	N.S.	N.B.	P.Q.	Ont.	Man.	Sask.	Alta.	B.C.	U.S.A.	Gr. Britain	Australia	Europe	Unknown	Total
From																
Newfoundland.			1			2						1				2
Prince Edward Isld.	1	2				1										2
Nova Scotia.																4
New Brunswick.						1								2		3
Quebec.			2	1			3			2	1		1			10
Ontario.						3		2		1					1	7
Manitoba.							3		2							5
Saskatchewan.								2		1						3
Alberta.							5				1					6
British Columbia.								2		1	2					5
Total.	1	2	3	1		7	11	4	2	4	4	1	1	2	1	44

TABLE III
DENTISTS PRACTISING SPECIALTIES
(Only those practising the specialty full-time are enumerated.)

	Nfld.	P.E.I.	N.S.	N.B.	P.Q.	Ont.	Man.	Sask.	Alta.	B.C.	Total
Orthodontists.	0	0	2	1	16	50	5	2	8	9	93
Dental Oral Surgeons (Exodontists). ..	0	0	2	0	6	34	7	0	5	7	61
Periodontists.	0	0	0	0	3	13	0	0	0	3	19
Paedodontists.	0	0	0	0	0	6	0	0	3	7	16
Total.	0	0	4	1	25	103	12	2	16	26	189

TABLE IV
DENTISTS EMPLOYED IN HEALTH SERVICES

	Nfld.	P.E.I.	N.S.	N.B.	P.Q.	Ont.	Man.	Sask.	Alta.	B.C.	Total
Dental Schools (Teaching Staff)											
Full-Time.....	0	0	3	0	14	12	0	0	3	0	32
Half-Time.....	0	0	0	0	0	9	0	0	9	0	18
Hospital Service											
Full-Time.....	0	0	3	2	0	20	0	3	3	0	31
Half-Time.....	0	0	0	0	0	7	0	0	0	5	12
School Dental Service											
Full-Time.....	0	0	1	2	0	28	1	1	4	0	37
Half-Time.....	0	0	3	1	0	58	3	1	4	0	70
Public Health Service											
Full-Time.....	2	2	2	1	25	20	2	7	2	26	89
Half-Time.....	0	0	0	0	0	0	0	0	0	2	2
Total: Full-Time.....	2	2	9	5	39	80	3	11	12	26	189
Half-Time.....	0	0	3	1	0	74	3	1	13	7	102

TABLE V
DENTISTS EMPLOYED BY FEDERAL DEPARTMENTS
(Full-time)

Department of Veterans Affairs.....	37
Department of National Defence.....	168
Department of National Health and Welfare.....	15
Total.....	220

D.V.A. FEE SCHEDULE

The schedule of dental fees of the Department of Veterans Affairs has been revised and approved. The new schedule, showing an average increase of about 30%, became effective as of February 1st.

Representatives of the Canadian Dental Association met in Ottawa last November to discuss revision of the fee schedule with officials of D.V.A. and other departments. The meeting resulted in an upward revision of most items. Information has recently been received that the new schedule has been approved without alteration.

DEPARTMENT OF VETERANS AFFAIRS
Schedule of Dental Fees for payment to Civilian Dentists

- (1) Unless otherwise directed, the schedule of fees in this Section shall apply to the payment of accounts for authorized treatment and in the collection of recoverable charges.
- (2) Fees for dental operations other than those listed and fees in excess of those allowed for similar operations must be approved by the Director.
- (3) The dentist is expected to assume responsibility for all restorations and appliances for a reasonable period after completion.
- (4) The letters in parentheses have been inserted as a cross reference to the explanatory comments upon certain items.
- (a) Diagnosis and report..... \$ 3.00
 Professional visit—Home or hospital.... 5.00

- (b) Treatments
- (1) Prophylaxis (Includes scaling and polishing)..... 3.00 to 5.00
- (2) Periodontal treatment
 Fee to be set by District Chief of Service—Dentistry
- (3) Emergency (Palliative)..... 3.00
- (4) Pulp Cap..... 3.00
- (c) Radiograms and Diagnosis
- (1) Single intra-oral film (Bite-wing or Apical)..... 3.00
- (2) Each additional film..... 1.00
- (3) Complete series, upper or lower (7 films)..... 7.00
- (4) Full mouth series (14 films)..... 12.00

(d) Surgery	
(1) Extraction under local anaesthesia . . .	
First tooth in each quadrant . . .	4.00
Each additional tooth in same quadrant . . .	1.00
(2) Extraction under General Anaesthesia	
1-3 teeth . . .	7.00
4-8 teeth . . .	10.00
8-16 teeth . . .	15.00
Over 16 teeth . . .	20.00
Oral surgery, including impactions and fractures. Detailed report and radiograms are required. Fee to be set by Director.	
(3) Extirpation of pulp, treatment and filling of root canal. Fee to be set by the District Chief of Service—Dentistry.	
(e) Single tooth restorations	
(1) Amalgam (1 surface) . . .	3.00
(2) Amalgam (2 surfaces) . . .	6.00
(3) Amalgam (3 surfaces) . . .	8.00
(4) Silicate . . .	6.00
(5) Acrylic . . .	6.00
(6) Inlay or foil, gold (1 surface) . . .	15.00
(7) Inlay or foil, gold (2 surfaces) . . .	20.00
(8) Inlay or foil, gold (3 surfaces) . . .	25.00
Crown, gold, cast occlusal . . .	25.00
(9) Crown, gold, anterior . . .	25.00
Crown, gold, repair, including recementation . . .	10.00
(10) Crown Porcelain Jacket . . .	50.00
Crown Porcelain Jacket Remake . . .	25.00
(11) Crown Acrylic Jacket . . .	35.00
Crown Acrylic Jacket Remake . . .	20.00
Recementing inlay or crown . . .	5.00
(f) Fixed Bridges (Attachments as in (e) of this section) Pontic (Including soldering to attachment) . . .	
Repair bridge using new unit (abutment or pontic)	15.00
Regular fee, as above, for new unit plus assembly, solder and recement	
—1 abutment . . .	5.00
—2 or more abutments . . .	7.00
Replace porcelain facing . . .	5.00
Recement bridge with one abutment with two or more abutments . . .	5.00
Recement bridge with two or more abutments . . .	7.00
(g) Removable partial dentures (attachments as below)	
Base and teeth . . .	40.00
Clasp, with rest, cast or wrought gold . . .	10.00
Bar, gold wrought assembled . . .	10.00
Bar, cast . . .	20.00
Remake partial denture (using teeth and attachments of present denture)	35.00
Reline partial denture . . .	18.00
(h) Complete Denture	
Upper or lower, each . . .	60.00
Upper or lower, Remake (using teeth of present denture) . . .	55.00
Upper or lower, Reline or Rebase Processed . . .	25.00
Upper or lower, Reline or Rebase Self-cured . . .	10.00
(i) Repair Denture, partial or complete	
Base only . . .	7.00
Each tooth replaced . . . add	2.00
Repair or extension requiring an impression of the arch . . . add	5.00

The following are explanatory comments and specifications for dental operations; the letters in parentheses referring to similar cross-reference lettering on the fee table:

- (a) Before making an authorized examination, dental surgeons must remove such calculus or debris as is necessary to permit making an accurate diagnosis and report; the report must be complete in all details (see page 4 of Form DVA TS 467), otherwise a fee for examination will not be allowed.
- (b) (1) A prophylaxis is to be interpreted as the removal of calculus plus the polishing of the

teeth and is authorized only when no morbid changes requiring periodontal treatment are anticipated. It may not be construed as an additional fee to that authorized for other periodontal treatments. The \$3.00 fee will apply when there are few teeth present, or polishing only is required.

- (b) (2) Periodontal treatments may be authorized only following receipt of a recommendation from the operator which clearly indicates the necessity for such treatment by a detailed report of the present periodontal condition, the proposed treatment and the prognosis.

- (b) (3) Departmental responsibility for emergency treatment is limited to veterans and others who are eligible to obtain treatment at public expense.

- (b) (4) Fees for emergency treatment, other than palliative, shall be allowed in accordance with fees provided for the respective operations carried out.

- (b) (5) The fee for pulp caps is to be allowed only when there is actual pulp involvement and where there is a reasonable chance of pulp preservation. A recognized pulp capping material is to be used.

- (c) (1)-(4) Radiograms are to be authorized by CSD when required as an aid in diagnosis. Films which are distorted, or which fail to show sufficient area to be of value as an aid to diagnosis, or which are not clearly marked with the name and number of the patient and the date, are not to be accepted nor paid for.

- (d) (1) Extractions are ordinarily to be made under local anaesthesia. Extractions without an anaesthetic should not be undertaken. The maximum fee for extractions in any case is not to exceed \$30.00.

- (d) (2) General anaesthetics are to be authorized only in exceptional cases. Anaesthetist's fee will be submitted as a separate account to Admission Services for payment.

- (d) (3) Extirpation of pulp and root canal filling will be authorized only in exceptional cases where CSD is satisfied that a successful result may be expected. The treatment must be carried out by a capable operator using a standard accepted technique.

- (e) The use of rubber dam in the insertion of all fillings is advocated.

- (e) (1)-(3) Cavities to be filled with amalgam shall have, where indicated, a protective base against thermal shock inserted at no additional charge. All fillings must be properly contoured, have a correct contact point, and must have grooves and cusps carved to occlusion. The maximum fee for amalgam fillings in any one tooth surface shall not exceed \$3.00; nor shall the maximum fee for amalgam fillings in any one tooth exceed \$11.00.

- (e) (4) (5) Teeth to be restored with silicate or acrylic shall have the pulpal wall protected with radiopaque material impervious to the filling ingredients at no additional charge. The maximum fee for such restorations for any one tooth shall not exceed \$12.00.

- (e) (6)-(8) Gold used for inlays and abutments is to be of approved A.D.A. metallurgical standards. Inlays not used as bridge abutments are to be authorized only for the six anterior teeth, upper or lower, where the incisal edge or angle is involved. (For R.C.M. Police members, inlays may be provided for the eight anterior teeth, upper or lower.) Inlays for posterior teeth may not be authorized except for use as bridge abutments.

- (e) (9) Biting surfaces of crowns must be heavily reinforced with 18K solder.

- (e) (10) (11) Jacket crowns may be authorized by the Director where they are indicated and indispensable for the preservation of the vitality of the teeth.

- (f) Fixed bridges may be authorized for replacement of any of the six anterior teeth, upper or lower, except in the case of R.C.M. Police members, where any of the eight anterior teeth, upper or lower, may be replaced by this type of restoration.
- (g) Partial denture, either arch, may be authorized only where three or more artificial teeth are used in its construction.
All clasps must grasp opposing convex surfaces (double arm) and have a rest to prevent gingival displacement.

Cast clasps and bars are to be authorized only where anatomical or occupational conditions demand their use.

Gold bars must be of approved A.D.A. metallurgical standard and not what are commonly termed "gold cased" bars.

- (g) (h) (i) In the construction of removable appliances, a recognized and accepted dental technique is to be followed. Recognized brand materials and teeth of highest quality only are to be used.

THE CORPS

Brigadier Wansbrough at Research Meeting

Brigadier E. M. Wansbrough attended the 24th Meeting of the Associate Committee on Dental Research of the National Research Council held in Montreal.

Major A. R. Smith Promoted

Army Headquarters has announced the promotion of Major A. R. Smith to the rank of Lieutenant-Colonel, effective February 1st, 1958.

Lt.-Col. Smith was born in Charlottetown, P.E.I. He received his High School education at Prince of Wales College in Charlottetown and attended Dalhousie University where he attained his B.A. and graduated in 1940 with a D.D.S. He first enrolled in the Canadian Army in July, 1940, and served with the C.D.C. until his release in October, 1945. Lt.-Col. Smith again enrolled in the Canadian Army in October, 1947, and was posted to Eastern Command. In November, 1950, he was moved to Quebec Command where he served at R.C.A.F. Station, Goose Bay, Labrador. Lt.-Col. Smith saw service in Korea from August, 1952, until August, 1953. Since his return to Canada he has been continuously attached to the Royal Canadian Navy, serving in Naval Establishments both afloat in H.M.C.S. "Magnificent" and "Bonaventure" and ashore in H.M.C.S. "Cornwallis" and "Stadacona". Lt.-Col. Smith is currently employed at H.M.C.S. "Stadacona" in Halifax, N.S. Mrs. Smith and their four children reside at Halifax.

Officers Attend Courses

Lt.-Col. C. M. Cornish attended a short course in Casualty Treatment at the U.S. Naval Dental School in Bethesda, Maryland.

The following officers of the R.C.D.C. Regular Force attended the Physicians' and

Dentists' Course at the Canadian Civil Defence College in Arnprior, Ontario:

Colonel I. A. L. Miller; Lt.-Col. W. M. Sinclair; Lt.-Col. A. R. Smith; Major J. C. Brick; Major P. Guevremont; Major J. E. Hughson; Major F. M. Nesbitt; Major A. R. Ramsay; Major P. S. Sills; Major J. W. Turner.

R.C.D.C. School to Open June 14

It is hoped that many ex-members and friends of the Corps are planning to attend the official opening of the R.C.D.C. School at Camp Borden. A tentative date of June 14, 1958, has been set and it is hoped that the Minister of National Defence will officiate. It is planned to make this occasion a memorable event in the history of the Royal Canadian Dental Corps. Detailed information will be made available in the near future.

Major Craigie Addresses London Society

Major L. G. Craigie of the R.C.D.C. School, presented a clinic at the London and District Dental Society Meeting on Saturday, February 15, 1958.

Officers Attend Courses

Major G. E. Windsor, R.C.A.F. Station, Cold Lake, Alberta, has been attending a two months' course in Prosthetic Dentistry at the U.S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland, U.S.A.

Colonel G. B. Shillington, Senior Consultant, R.C.D.C., attended the American Denture Society Meeting and the Chicago Mid-Winter Dental Convention.

Colonel B. P. Kearney visited the U.S. Army Medical Field Service School, Brooke Army Medical Center, Fort Sam Houston, Texas, following attendance at the Chicago Mid-Winter Dental Convention.

THE PROVINCES

BRITISH COLUMBIA

Vancouver and District Dental Society

Interest in dentistry at the national level was stimulated by the officials of the Canadian Dental Association who spoke at the society's March meeting. There is no better cementing medium than the annual coast-to-coast pilgrimage of the president and secretary.

Dr. Arthur Gerald Racey was presented by Dr. C. M. Whitworth, President of the B.C. College of Dental Surgeons, who cited the lengthy pedigree and accomplishments of the national president. Dr. Racey sympathized with B.C. dentists in their laboratory problems, but thought that the difficulties would be surmounted.

In pursuing his prepared address the speaker stated that the professional man has a definite responsibility to the public for the privilege of practising his profession, and that it is an individual concern. Emphasized were preventive measures such as fluoridation, student recruitment, auxiliary personnel, and research. Dr. J. A. Chambers thanked the C.D.A. President for his timely address.

Dr. Harold Cline, Past President of the C.D.A., enumerated the honors that had been accorded to the Secretary of the national body, who in turn felt grateful for praise from "a former employer".

At the outset Dr. Gullett gave his views of the present problem in British Columbia. His pronouncements and advice had the solidity and wisdom of long experience and seemed to be a fitting prelude to the discussion of national affairs which followed.

From overseas observation many abuses were noted in health schemes, and most dentists who participated in them were dissatisfied. A few side-lights were given of practice in England which signified a lowering of moral fibre. In health insurance plans involving dentistry which might become the rule in Canada, no mention has ever been made of the quality of service. Canadian dentists were advised not to be caught short if "welfare" dentistry should be introduced. The help of experts is needed to enable the profession to remain in control of its affairs. The keeping of statistics and the growing importance of getting them were stressed.

An interesting discourse terminated with these observations: People today do not want to do their own thinking. People always think the next fellow has more money and a softer job. The important decisions of life are being made by fewer and fewer people.

In paying tribute to the speaker at the conclusion of the evening, Dr. John Ingle-dew averred that Dr. Gullett had made a thought-provoking contribution.

North-west B.C. Dental Society

A new society made its debut when a section of British Columbia which has long been isolated from the advantages of dental fraternization was at last organized. The new society is composed of dental practitioners from Kitimat, Terrace and Prince Rupert.

The first meeting was held in Terrace

British Columbia Dental Association Convention

Vancouver Hotel, Vancouver, B.C.

May 1-2-3

Address enquiries to: DR. W. ROSS UPTON, 217 Medical Dental Building,
925 West Georgia Street, VANCOUVER 1, B.C.

on February 3rd when these officers were elected:

President — Dr. H. W. McDonald,
Prince Rupert.

Vice President — Dr. K. M. MacPherson,
Terrace.

Secretary-Treasurer — Dr. R. M. Waddell,
Prince Rupert.

A constitution was drawn up and committees were formed. The next meeting will be held in Kitimat during the summer.

Upper Island Dental Society

These new officers have been chosen:

President — V. P. Gilbert

Vice President — H. J. Dombrowski

Secretary-Treasurer — G. H. Pettapiece

Program Director — R. D. Bleakley

During the past fall two very good clinics were given by Tom Vernon and Orville Wright. John Folkins spoke on Oral Surgery at the February meeting — a most interesting and informative talk.

Prince George and District Dental Society

In the new slate of officers for 1958 are Dr. Denny Waller as President, Dr. Jack Newby as Vice President, and Dr. Bill Aitken as Secretary-Treasurer.

Proud of the part taken in fluoridating Prince George's water supply, the society has just completed a second school survey of dental health on the second anniversary of fluoridation. In four more years, when two additional surveys have been completed, there should be definite results to proclaim.

Victoria and District Dental Society

Thirty-five members met at the Empress Hotel to listen to Dr. R. I. Yorsh's discourse on "Practice Management". This speaker dispensed sound advice in his own inimitable, racy style. His humorous and unorthodox presentation rocked the meeting, but one was constantly aware of the shrewd, analytical mind underneath, revealing itself in the organized approach and coverage of this controversial subject. It was truly "dentistry without tears". Introduced by Dr. R. M. Torrie, the lecturer was thanked by Dr. Bob Horne.

Interior Dental Society

The spring meeting was held in Kamloops on March 1. Dr. Ross Upton gave an interesting review of the activities of several B.C.D.A. committees, including the staff at

the Association office. The main topic, "Ethics", was food for thought.

Dr. Don Gullett spoke of our position on this continent in relation to the practice of dentistry in the western world. All those present were keenly interested in the facts reviewed by the C.D.A. Secretary. Dr. A. Gerald Racey, President of the C.D.A., gave some insight into the need for education and research in dentistry today.

D. H. M.

MANITOBA

New Faculty of Dentistry

The University of Manitoba has recently announced that it will accept a class of 30 students in its new Faculty of Dentistry this coming September. While the University is planning a new 57,000 square foot building to house its Faculty of Dentistry, this building will not be ready for occupancy until the Fall of 1959, but because of the need for dental graduates, a decision was made to accept a class of 30 students this September with accommodation for them being provided within the present facilities of the Medical College of the University.

Dr. A. H. Sinclair-Hall

Dr. H. H. Saunderson, the President of the University of Manitoba, recently announced that Dr. A. H. Sinclair-Hall, presently of Rickmansworth, England, has been appointed a lecturer in Anatomy at the University of Manitoba. Dr. Sinclair-Hall's appointment is one of the first made by the University in the development of its new Faculty of Dentistry.

Dr. Sinclair-Hall is a native of Winnipeg, and a 1930 graduate in Medicine of the University of Manitoba. He went to the British Isles in 1936 where he did considerable post-graduate work and took his Fellowship in the Royal College of Surgeons. Dr. Sinclair-Hall then joined the British Colonial Medical Services as a surgeon. The following 15 years of his life were spent in various parts of the Commonwealth. He retired from this service in 1953, and took up residence in England. Dr. Sinclair-Hall and his wife plan to arrive in Winnipeg in April, at which time he will take up his appointment in the Department of Anatomy.

Dr. George A. Brass

Dr. H. H. Saunderson, the President of the University of Manitoba, announced recently that Dr. George A. Brass, of Edmonton, Alberta, has been appointed Professor of Operative Dentistry and Chairman of that department in the new Faculty of Dentistry of the University of Manitoba.

Dr. Brass is a native of Yorkton, Saskatchewan, the son of the late Dr. D. J. Brass, a pioneer dentist of that community, and the late Mrs. Brass. Dr. Brass attended elementary and high school in Yorkton, and took his pre-dental training at the University of Manitoba. He graduated in Dentistry from Northwestern University, Chicago, in 1939, and shortly thereafter joined the Royal Canadian Dental Corps with which he served for over five years in Canada, British Isles, Italy and Northwest Europe. Upon discharge in 1945, Dr. Brass returned to Northwestern University and the University of Michigan for post-graduate training in Operative Dentistry. He then went to Edmonton where he has been an Associate Professor of Operative Dentistry at the University of Alberta. Dr. Brass, Mrs. Brass, and their three children expect to move into Winnipeg in July in time to assume his teaching responsibilities in the Faculty of Dentistry which is to admit its first class in September.

President's Visitation

On Monday, February 24th, the Manitoba Dental Association was honored by the annual visit of the Canadian Dental Association President, Dr. Gerald Racey, and the C.D.A. Secretary, Dr. Don Gullett.

Refreshments were served prior to an excellent dinner, after which Dr. T. J. Cooke introduced Dr. Racey, who spoke on his views of The Future of Canadian Dentistry. He brought out how many changes have taken place in science and in society as a whole and emphasized that the professions must be prepared to cope with these changes. He said that a professional man must face up to these social problems and remember that he has civic obligations as well as professional obligations.

Dr. Racey, along the same theme, brought out the fact that only 35 per cent of our population are receiving any type of dental treatment, let alone getting complete attention, and that the ratio of dentists to the population is getting higher each year. He spoke of the many difficulties in trying to attract good students to dental schools. He complimented the University of Manitoba on going ahead with its new dental school and on its choice of Dr. J. W. Neilson as Dean for this new school.



DR. GEORGE A. BRASS,
*Professor of Operative Dentistry, Faculty of Dentistry,
University of Manitoba.*

Dr. Racey concluded by saying that the general community welfare is everybody's concern, and that dentists should take the lead in bringing this about within our own field.

Dr. J. O. Brown then introduced Dr. Gullett, who spoke on several matters of great concern to all dentists. He advised that there will be a new economic survey made by the Canadian Dental Association and that it was extremely important for all members to return their answers; that this type of statistic is absolutely necessary to have in making presentations on our behalf to non-professional groups. He also covered the C.D.A. Pension Plan with its many benefits and low cost. Dr. Gullett then summarized his impressions of a three-month tour of European countries, each of which had some form of socialized Dentistry. He spoke of the many difficulties existing within the scheme in Great Britain, but also told of the high status of the profession in Norway. He emphasized that all these countries felt that socialized dentistry will be coming to our continent fairly soon and that we should prepare for it in every possible way. Dr. Gullett feels that the opportunity is here for the profession to direct and control such a scheme when it comes, if we can prove ourselves capable of formulating proper plans and accepting active responsibility. He felt that by instituting some type of non-profit plans for running welfare services or similar types

of programs, we would show that we are willing to take this responsibility.

Dr. W. J. Riley thanked Dr. Racey and Dr. Gullett on behalf of the dentists of Manitoba for the inspiration and the thoughts that they left with us.

Winnipeg Dental Society

Dr. W. H. Wilson, Professor of Crown and Bridge, University of Oregon Dental School, was the guest speaker. Dr. Wilson is a graduate of the University of Minnesota and had quite a few of our Society members as classmates, so there was a great deal of interest in his presentation. He dealt mainly with full-mouth reconstruction cases. He has developed a technique which appears relatively complicated, but which is used by his dental students with excellent results. He also showed a very fine colour movie of carrying a case completely through all the chair-side and laboratory steps, which gave the audience a good idea of the problems involved in this type of dentistry but also showed the beautiful results that can be obtained when a careful technique is followed.

Dr. Ivan Jackson very eloquently thanked Dr. Wilson on behalf of the Winnipeg Society which met on February 5th.

The regular business meeting was held following lunch, with Dr. Walter Grenkow, President, presiding.

Dr. M. J. Averback, Chairman of the Committee on Post-Payment Plans, reported on publicity requests from the firms financing these plans.

Dr. J. O. Brown reported on the Revised Workmen's Compensation Scale of Fees, a subject which has been under discussion for quite a considerable time, but which appears to be much more satisfactory now.

J. P. B.

ONTARIO

Queen's Park Rejects Ottawa Fluoride Bill

The Ontario Legislature's Private Bills Committee voted, on March 6th, against allowing Ottawa, by a private bill, to fluoridate its water supply if it so desired. The outcome of the meeting was never in doubt as it was apparent from the beginning of the discussion that the government forces in the committee considered the issue too fraught with political overtones to risk giving approval to the Ottawa Bill. The vote split along party lines with 15 in favour of

deletion of the fluoridation clause and two for retention.

Several groups opposed the bill, the Christian Science Church, the Pure Water Committee of Ottawa, and Citizens' Health Committee of Ottawa. As well, Mr. R. M. Willes Chitty of the National Association of Ratepayers, spoke against the bill as did Dr. S. W. Leslie, a Toronto oral surgeon. Dr. Leslie maintained that as yet, sufficient evidence does not exist to ensure that mass fluoridation was safe. He felt accurate investigations of places like Brantford and Stratford likely would show high rates of backache, kidney trouble, eyesight deterioration, and cataracts. He stated that he did not know whether fluorides contributed to deafness or allergies. At one juncture he employed the term pollution when referring to fluoridation but later stated that that was not exactly the term to be used. He feared hypersensitivity and adverse psychosomatic effects.

Alderman Mrs. May Nickson of Ottawa with city solicitor Mr. Gordon Medcalf, asked the committee to consider the city application which was supported by a 19 to four vote of the city council. A letter from the Ottawa Academy of Medicine endorsing fluoridation was read into the proceedings, and Dr. Graham Hudson was present to represent the Ottawa Dental Society.

A group of representatives of the health professions was present and delivered a short, supporting brief. The statement was read by Dr. A. L. Chute, Professor of Paediatrics, University of Toronto, and Physician-in-Chief of the Hospital for Sick Children, Toronto. Dr. Wesley J. Dunn, Registrar-Secretary of the Royal College of Dental Surgeons of Ontario, was called upon to make a statement on behalf of the dental profession, specifically. Others in the delegation were:

Dr. Milton H. Brown, Professor of Public Health and Preventive Medicine, University of Toronto, and Head of the Department of Public Health, School of Hygiene, University of Toronto, Representative of the Ontario Medical Association;

Dr. L. F. Koyl, Director of the Assessment Unit Sunnybrook Hospital, Director: A Study of Aging, Sunnybrook Hospital;

Dr. Gordon Nikiforuk, Professor of Preventive Dentistry and Chairman of the Division of Dental Research, University of Toronto, President of the Canadian Society of Dentistry for Children;

Dr. Mark G. Boyes, Chairman, Dental Public Health Committee of the Ontario Dental Association, Associate in Paedodontics, Faculty of Dentistry, University of Toronto;

Dr. F. Harold Shepherd, President of Ontario Dental Association;

Prof. L. Joslyn Rogers, Consulting Chemist in Medical Legal Department, Attorney General's Laboratory, Former Professor of Analytical Chemistry, Toronto University;

Dr. F. H. Compton, Director, Division of Dental Services, Dept. of Public Health, Toronto, representing Ontario Public Health Association.

Toronto Academy of Dentistry

The elections of the Academy of Dentistry, conducted recently in Toronto, resulted in the following Council for the season 1958-1959:

Immediate Past President — Dr. R. M. Marshall.

President — Dr. William A. Weir.

President-elect — Dr. James A. Bigelow.

Secretary — Dr. Vernon A. Herron.

Treasurer — Dr. Arthur E. Histrop.

Councillors:

East Toronto Dental Association — Dr. A. E. Kordell Hogg.

West Toronto Dental Association — Dr. David J. E. Mitchell.

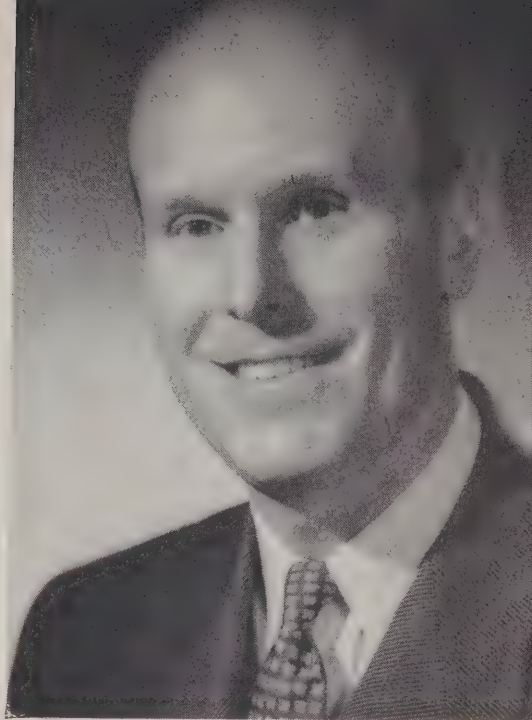
North Toronto Dental Association — Dr. Edward R. Bilkey, Dr. John H. Mullett.

Central Toronto Dental Association — Dr. Robert M. Grainger, Dr. Frank H. Compton.

London and District Dental Society

The fourth regular meeting of the London and District Dental Society's 1957-58 season was held on Saturday, February 15, 1958, at the Hotel London. Present were sixty-three members and guests from London and district. A dinner and business meeting conducted by Society President Dr. W. H. E. Mason was followed by the scientific portion of the program. Guest clinician for the evening was Major L. G. Craigie from the Royal Canadian Dental Corps School, Camp Borden, Ontario. The speaker was introduced by Dr. R. L. Clayton and the subject of his address was "Newer Concepts in Cavity Preparation".

Major Craigie outlined in detail the Tanner Ingerham technique used in the preparation of proximal cavities. The technique was described as being most useful in cases where the proximal caries was not too extensive, thereby necessitating the removal of considerable amounts of tooth substance to effect proper extension of the cavity. The technique, however, does require



DR. WILLIAM A. WEIR,
President, Academy of Dentistry, Toronto.

the teeth to be in fairly good alignment. Major Craigie outlined also a method of constructing "transitional splints" to be used in the process of constructing dental bridges. The "transitional splints" provide a simple means of protecting the prepared teeth, preventing them from moving, and add greatly to the appearance of the patient during the period between preparation of the abutments and cementation of the finished bridge. Many excellent colour slides were shown to support the lecture material. The speaker was thanked on behalf of the Society by Dr. D. J. Ferguson.

D. C. W.

Niagara Peninsula Dental Association

The fifth regular meeting of the Niagara Peninsula Dental Association was held on Friday, February 14th at the Sheraton Brock Hotel, Niagara Falls. Eighty-one members and dental assistants were in attendance, this being Dental Nurses' and Assistants' night.

The speaker was Dr. Bob Locke of Toronto, and his presentation on "Pre and Post Operative Sedation for Dental Procedures" was enjoyed by all.

The next regular meeting is a special, all-day clinic "Aetiology, Recognition and Treatment of Periodontal Disease" by Dr. Donald A. Kerr of the University of Michigan School of Dentistry, on Friday, March 14th at St. Catharines, Ontario.



D.N.H. & W. DENTAL CONSULTANT AT SARNIA.

Dr. Harry Brown, dental consultant to the Department of National Health and Welfare presented the opening address which launched a week of dental public health education in Lambton County. Shown with Dr. Brown are Dr. N. F. Anderson, president (centre) and Dr. R. M. Williams, chairman of the Dental Public Health Committee.

Lambton County Dental Society

National Health Week proved very successful in Sarnia, as the Lambton County Dental Society celebrated a full week of Dental Public Health education.

Inauguration of the event was a dinner meeting with Dr. H. K. Brown, consultant with the Department of National Health and Welfare, who outlined results of the Sarnia, Brantford, Stratford fluoridation project. He also spoke of the "change that is taking place, as shown by our willingness to go out and guide the community in the self-help of dental care".

A slogan contest was held in the schools of the county with the topic pertinent to the three lessons on Dental Public Health as prepared by the local dental society. Winners in each school received a "silver dollar", while the three (3) winning schools of the city were awarded prizes by the Optimist Club, Sarnia Milk Federation, Sarnia Druggists' Society and the Lambton County Dental Society.

Extensive co-operation was met with the press, radio and the Board of Education as several dentists outlined Dental Public Health in the schools, while others addressed various service clubs.

Dr. N. F. Anderson, president of the Lambton County Dental Society, was aided in the project by Dr. R. M. Williams, Chairman of the Dental Public Health Committee, Dr. G. Milne, press and radio, Dr. William McLean, education, and Dr. D. Smith, editor.

R. M. W.

QUEBEC

Montreal Dental Club

The Annual Winter Meet of the Montreal Dental Club was, as in the past year, held at the Chantecler Hotel in the Laurentian resort town of Ste-Adele en-Haut. Those members and their wives who attended took full advantage of the cold but otherwise ideal winter conditions which prevailed during the three-day outing of February 7th to 9th inclusive. Skiing, curling and swimming afforded sportsminded members a choice of activities, while others, warmly bundled against below zero temperatures, strolled leisurely among the pleasant surroundings.

An extended cocktail party Saturday evening proved to be the social highlight of the week-end, where wives, recent and established graduates mingled together in a jovial atmosphere.

With reluctance and pleasant memories, members returned to the city anticipating next winter's outing.

W. D. S.

Montreal Dental Club

The regular monthly meeting of the Montreal Dental Club got off to an early start on Monday, February 10th, as two prominent members of the club, Drs. Don Gordon and Rolland Lamb, each presented a table clinic commencing at 2 p.m. in the Queen's Hotel. Dr. Gordon demonstrated on extracted teeth, the principles of cavity preparation using both the conventional cutting tools and the high speed Bordon Air Rotor, emphasizing the differences in operative techniques between the two. His clinic also included the rubber dam application and gingival retraction with dam clamps, the placing of matrix retainers for amalgam restorations — in particular for class V preparations — utilizing wedges and compound blocking.

Dr. Lamb demonstrated the principles involved in taking impressions of inlay and crown and bridge preparations, using different impression materials. Included was Coe-Flex, a rubberbase material, and hydro-colloid — both techniques calling for prior gingival retraction — and for full crowns compound with graphite wax washes in copper bands. This was followed by the pouring of stone dies and the direct wax-up of pin ledge and slipper inlays, including the spruing of the wax patterns. Dr. Lamb also demonstrated the preparation of full crowns using $\frac{5}{8}$ " cup discs, and the method of removing faulty full crown restorations,

and commented on the use of temporary aluminum shell crowns.

Both clinics were well presented, highly informative and greatly appreciated by those present.

Following the evening dinner, the business meeting, presided over by Dr. Robert Harvey, got under way. Voted in as new members were Drs. J. F. McMullan, M. A. Reutcky, W. Robinson, P. L. Samis and A. Tekela. Dr. Harvey informed members of the death of Dr. E. J. Stewart who was president of the Montreal Dental Club in 1913. Dr. E. T. Cleveland impressed upon the members the desirability of the club's plan for "disaster" insurance, and Dr. Jean Dorion, the club's representative to the C.D.S.P.Q., spoke on health insurance and of the C.D.A.'s feeling to "save dentistry for the dental profession".

Following the business portion of the meeting, Drs. Don Gordon and Rolland Lamb each presented talks with colored slide illustrations. Dr. Gordon spoke of the restoration of gingival destruction, using as restorative material both amalgam and gold foil. This was followed by Dr. Lamb's presentation of acrylic faced full crowns.

An interested and attentive audience attested to the excellence of both presentations.

W. D. S.

Mount Royal Dental Society

The second all-day clinic of the Mount Royal Dental Society took place on January 10th, 1958, with Dr. S. C. Burnell and Dr. M. D. Lerman of Chicago as guest clinicians, who presented an accurate technique for multiple inlay construction. The criterion of success with this technique is that inlays must seat perfectly consistently in the mouth, practically without adjustment, and with a minimum of time spent at the chair. This is achieved by eliminating, in the laboratory, errors which have crept into the technique.

On February 11th, 1958, the Society was addressed by Dr. C. A. McCabe, Chief of the Dental Hygiene League of the Province of Quebec. It was most interesting to hear how the Dental Hygiene League hopes to educate the public at large to appreciate and to demand good dentistry, thereby not only improving the Dental Health of our population, but also, as a by-product, to eliminate illegal practice. Dr. McCabe outlined the program now under way, which concentrates first and foremost on instructing the teachers of our grade and public schools, so that correct information is properly disseminated to our school children. Fluoridation was also discussed.

C. G. B.

SASKATCHEWAN

University Hospital Dental Staff Hears Dr. Dundee

The Dental Staff of the University Hospital at their last regular meeting had as their guest speaker, Dr. J. Dundee, on the subject of Antibiotics Of The Head and Neck.

Dr. Dundee stated that the principles involved were the same for the head and neck as for any part of the body. In order for antibiotics to be effective, he pointed out that they must come into contact with the bacteria. He referred to the ineffectiveness of any lozenges on any infection in the tissues. The only effective methods of administration of antibiotics were by mouth and injection. He indicated that where pus was encapsulated, antibiotics were effective only to prevent Septicaemia. The antibiotics would not react on the encapsulated pus. He advised the taking of smears and having cultures developed to determine which antibiotic should be used.

Dr. Dundee stated that there could be some bad reactions to all antibiotics. He discussed the pros and cons of many antibiotics such as Sulphas, Procaine Penicillin, Penicillin G, Penicillin V, Tetracyclines, Achromycine, Chloromycetin, Erythromycin, and Novobiocin.

Dr. Dundee gave a very interesting address on a most timely subject. Thanks were suitably extended by Dr. N. Gropper.

L. D. H.

Moose Jaw Dental Association

Recordings of a telephone course in dentistry were heard at a regular monthly meeting of the Moose Jaw Dental Association recently.

Topics of the course were "Clinical Full Denture Prosthesis," and "High Speed and Super Speed Hand Pieces for High Speed Operative Dentistry."

Dr. J. G. Mitchell, Regina, orthodontist, and approximately 15 Moose Jaw members attended.

Officers of the association are: Dr. E. E. Eades, president; Dr. John Zaporinuk, vice-president, and Dr. C. W. Wellington, secretary.

Dr. Eades, Dr. Wellington and Dr. Fraser Muirhead represented Moose Jaw at the ninety-third mid-winter meeting of the Chicago Dental Society in February. The meeting was a class reunion for Dr. Wellington who is a graduate of the Northwestern University in Chicago. Fifteen thousand dentists attended this meeting — believed to be the largest of its kind in the world.

IN MEMORIAM

Thomas Edwin Burton — Dr. Thomas Edwin Burton of Lennoxville died suddenly in February. He was in his 62nd year.

Dr. Burton was born at Cookshire and educated at Bishop's College School. He obtained his B.A. degree from Bishop's University and graduated from McGill University with the degree of D.D.S. He began his practice in Lennoxville in 1924.

During the Second World War he served with the Canadian Army Dental Corps attached to the R.C.A.F., resuming his practice in Lennoxville in 1946. In the First World War he served overseas with the 117th Battalion.

Dr. Burton was very popular with all who knew him and was an excellent curler. He was a member of the Masonic Lodge and St. George's Church.

He is survived by his wife, Evelyn, and his only son, Russell, also a sister, Mrs. R. M. Elliott, and a brother, John.

Jon Gunnlaugur Snidal — Dr. Jon Gunnlaugur Snidal of Winnipeg, Manitoba, died on January 26, 1958, in the Winnipeg General Hospital at the age of 78.

Dr. Snidal was born in Husavick, Manitoba. He graduated in 1907 and established his practice in Winnipeg, where he lived for 53 years.

He is survived by his wife, Anna, five sons, John Gerald; Dr. Marino James; Dr. Daniel Peter; Robert and David Harley; 13 grandchildren; two brothers, Chris, and Mundi, and one sister, Mrs. J. F. Hiscox.

James Albert McTaggart — Dr. James Albert McTaggart of Hensall, Ontario, died on December 8, 1957.

He was born in Exeter in 1878 and received his early education at Seaforth, Ontario. He graduated from the Royal College of Dental Surgeons in 1910 and practised in Blyth until 1917. From 1917 to 1927 he practised in Toronto and from 1927 to 1957 in Hensall, Ontario.

Dr. McTaggart was a member of the P.M. of A.F. of A.M. Blyth 1912; Huron and Bruce A.F. & A.M. Toronto; Huron Lodge, Hensall, 1928. He was one time winner of the Ontario Lawn Bowling Championship. Dr. McTaggart was Secretary-Treasurer of Blyth School Board from 1912 to 1917.

Surviving is his brother, G. E. McTaggart.

Bonar Meldrum Bracken — Dr. Bonar Meldrum Bracken of Grand Valley, Ontario, died in December, 1957.

Dr. Bracken graduated from the Royal College of Dental Surgeons in 1916 and set up practice in Grand Valley.

Victor Alexander Clark — Dr. Victor Alexander Clark of Saskatoon died suddenly in hospital in February.

Dr. Clark was born at Battersea, Ont., and graduated from the Royal College of Dental Surgeons, Toronto, in 1920. He practised in Craik, Sask. and then joined the Dental Corps. Upon his discharge in 1943 from the Dental Corps he became Dental surgeon for the Department of Veteran Affairs. He came to Saskatoon in 1943 where he continued to reside.

He was a member of Craik Masonic Lodge and of the Wa Wa Shrine in Regina.

Dr. Clark is survived by his widow and two brothers, Charles of Battersea, Ontario, and Harold of Mallorytown, Ontario.

Nelson Willard Haynes — Dr. Nelson Willard Haynes of Clinton, Ontario, died on February 28th, 1958.

Dr. Haynes was born in Ontario. He graduated from the Royal College of Dental Surgeons of Ontario in 1920 and practised in Edmonton, Alberta, from 1925-1955 and in Clinton, Ontario, from 1956-1958. Dr. Haynes also held the degree of Master of Dental Surgery.

He is survived by a daughter, Dr. Shirley Appleby, a son, Sterling Haynes, and two sisters, Mrs. Ann Ferguson, and Mrs. A. McPhail.

Richard Lawrence Graham — Dr. Richard Lawrence Graham of Port Hope, Ontario, died on January 29, 1958.

Dr. Graham was born in 1874. He graduated from the University of Toronto in 1896.

Surviving are his wife, Clara Maude, and a son, Harold S. Graham.

James O'Reilly Mandeville — Dr. James O'Reilly Mandeville of Pembroke, Ontario, died on March 9th, 1958.

He was born in 1899 at Wellington, Ontario. He received his early education at Picton. In 1923 he graduated from the R.C.D.S. and set up practice in Pembroke where he practised until his death.

Dr. Mandeville was past president of Renfrew County Dental Society. He was captain of Pembroke Golf Club in 1935, a member of Pembroke Curling Club and director of Kiwanis Club 1939-1940. He was vice-president of the Canadian Legion; Grand Knight of Knights of Columbus 1937-1938. Dr. Mandeville was a private in the Second Canadian Infantry Battalion from 1916 to 1919.

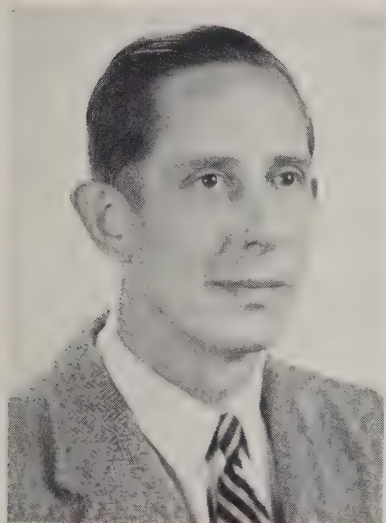
Surviving are his wife and four sisters, all of Buffalo, N.Y.

THE CANADIAN SOCIETY OF DENTISTRY FOR CHILDREN

(A Section of The Canadian Dental Association)

ANNUAL CONVENTION, SHERATON BROCK HOTEL, NIAGARA FALLS, ONTARIO

SATURDAY, MAY 10, 1958



DR. C. F. A. MOORREES
Chief, Orthodontic Department
Forsyth Dental Infirmary for
Children.



DR. RALPH E. McDONALD
Chairman, Department of Pedodontics
Indiana University, School of
Dentistry.

PROGRAMME:

- 9.00 a.m. Table Clinics on subjects in the general field of dentistry for children (arranged by Dr. Nick Mancini).
- 10.30 a.m. Growth Changes in the Dental Arch between 3 and 18 years of age. Dr. C. F. A. Moorrees, Forsyth Dental Infirmary for Children, Boston.
- 11.30 a.m. Business Meeting.
- 12.15 p.m. Luncheon (cost included in membership).
- 2.00 p.m. Current Trend in Vital Pulpal Therapy. Dr. Ralph E. McDonald, Chairman, Dept. of Pedodontics, University of Indiana.
- 3.00 p.m. Symposium on Dentistry for the Pre-School Child.

Participants:

- Dr. Wesley J. Dunn, Moderator.
- Dr. R. M. Grainger, Dental Statistician, Dental Section of Medical Statistics, Ontario Dept. of Health.
- Dr. F. Compton, Director of Dental Services, Toronto.
- Dr. E. R. Bilkey, General Practitioner.

Address enquiries to: DR. W. J. SPENCE, Secretary, 3000 Yonge St., Toronto 12, Ont.

THEME

THE TREND IN DENTISTRY IS TO EARLY TREATMENT AND PREVENTION

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th—29th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	Sept. 25th—28th
1961	Saskatoon, Saskatchewan	June 25th—28th

1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May
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FUTURE EVENTS

Date	Function	Location	Officer	Address
May 1, 2, 3, 1958	British Columbia Dental Association Annual Convention	Hotel Vancouver, Vancouver, B.C.	Dr. W. Ross Upton, Exec., Secretary,	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 10, 1958	Canadian Society of Dentistry for Children Annual Meeting	Sheraton Brock Hotel, Niagara Falls, Ont.	Dr. W. J. Spencé, Secretary	3000 Yonge St., Toronto 12, Ont.
May 18-21, 1958	Convention—Ontario Dental Association	Royal York Hotel, Toronto	Mrs. A. Durham, Secretary	234 St. George St. Toronto 5, Ont.
May 18-21, 1958	Joint Convention of Ontario Dental Nurses' & Assistants' Assoc. and the Dental Nurses' Alumnae Association	Royal York Hotel, Toronto	Miss E. J. McMullen, Convention Chairman	31 Brookdale Ave., Toronto, Ont.
June 15-19, 1958	Ninth Annual Berkshire Conference in Oral Pathology and Periodontology	Eastover in Lenox, Mass.		Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia	Mrs. M. Kolb, Secretary	4001 Spruce St. Philadelphia 2, Penna.
July 20-23, 1958	52nd Annual Session West Virginia State Dental Society	Greenbrier Hotel, White Sulphur Springs, W. Virginia	Dr. T. A. Edwards, Chairman	822 S. Kanawha St., Beckley, West Virginia
Aug. 27-Sept. 4, 1958	46th Annual Meeting International Dental Federation	Brussels, Belgium	Dr. M. Joachim, Secretary	67 Rue de Treves, Bruxelles, Belg.
Sept. 14, 15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon	500 Albert St., Kingston, Ont.
Nov. 1, 1958	Annual Meeting—New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.

SHORT GRADUATE COURSE

The Dental and Medical Faculty of the University of Minnesota—A course in Advanced Oral Pathology—April 28 through May 2, 1958—Fee \$50.00.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Notions générales sur l'hypnodontie*

Bref historique

L'hypnotisme est un phénomène dont certains effets étaient déjà connus de l'homme longtemps avant l'ère chrétienne. Cependant, ce n'est qu'au 18^{ième} siècle, soit en 1773, que des hommes de science commencent réellement à en étudier le mécanisme intime.

Jusqu'à cette date, personne encore n'avait essayé d'expliquer ce phénomène mystérieux et qui ne portait même pas de nom. Mesmer, un autrichien venu s'établir à Paris et considéré aujourd'hui comme l'instigateur de l'hypnotisme moderne, est le premier à s'appliquer à cette tâche. Ses travaux le conduisent à des succès retentissants. Cependant, devant l'inquiétude de ses contemporains sur la nature des résultats que Mesmer obtient, le monarque du temps, Louis XVI, or-

donne la formation d'une commission d'enquête chargée d'étudier la question. De cette commission font partie des gens tels que Lavoisier et Benjamin Franklin, alors ambassadeur des Etats-Unis en France. L'enquête se termine par la destitution de Mesmer, dont les succès sont qualifiés d'imaginaires.

Ce n'est que 50 ans plus tard et en Grande-Bretagne cette fois, que l'on retrouve un autre homme de science qui s'intéresse à l'hypnotisme: le Dr Elliotson. Le Dr Elliotson est alors le doyen du "Edinburgh Medical School". De plus, il est celui qui le premier a introduit l'emploi du stéthoscope. Il était sans doute un homme très ouvert aux choses nouvelles. Cet éminent médecin poursuit des études sur le phénomène hypnotique qui porte alors le nom de "mesmerisme". A la même époque, un autre Anglais du nom de Braid s'inspire des travaux du Dr Elliotson et établit la base des théories actuelles.

* Symposium présenté à la Société dentaire de Montréal, le 21 janvier 1958. Les participants étaient, entre autres, les confrères Paul Dionne, Eugène Lussier, Antoine Raymond.

Il déclare officiellement qu'à son avis ce n'est que la suggestion qui produit la transe hypnotique et qu'il ne s'agit là ni de pouvoirs diaboliques ni de pouvoirs surnaturels. C'est lui aussi qui donne le nom d'hypnose à ce phénomène. A la même époque, un autre médecin anglais, le Dr Esdaile, alors établi aux Indes, pratique 3,000 opérations sous anesthésie mesmérisme. Il est d'abord fort critiqué par ses contemporains et son droit de pratique lui est même enlevé. Ce fut sans doute parce que les gens du temps comprenaient mal l'hypnotisme et l'assimilaient à la magie. Peu de temps après cependant, le Dr Esdaile est de nouveau reconnu et on l'honore en donnant son nom à un hôpital anglais.

A la fin du 19^{ième} siècle, soit vers 1885, l'intérêt pour l'hypnose commence à diminuer à cause de l'apparition des anesthésiques chimiques.

Au cours de la première guerre mondiale un renouveau d'intérêt pour la science hypnotique se fait sentir, mais c'est surtout au cours de la guerre de 1939 que les sciences médicales modernes permettent une mise au point assez complète sur l'hypnose dont l'emploi se répand de plus en plus maintenant.

Aujourd'hui:—Près de 70,000 médecins en Angleterre seulement s'en servent. Plusieurs dentistes et médecins s'en servent aussi aux Etats-Unis et dans d'autres pays.

—Plusieurs universités américaines offrent des cours sur l'hypnotisme.

—Une grande quantité de journaux scientifiques sérieux sont publiés sur la matière.

—Plusieurs sociétés scientifiques sont formées pour permettre à ceux qui s'occupent d'hypnose de parfaire leurs connaissances.

—De plus, le Pape lui-même a approuvé l'usage de l'hypnose pour soulager la douleur.

Ces quelques notes historiques donnent un aperçu succinct de l'évolution de l'hypnotisme au cours des âges. Elles nous rappellent aussi de façon assez évidente que les pionniers dans plusieurs domaines ont souvent été critiqués et quelques fois

même déconsidérés, mais qu'à la longue leurs idées ont fini par être acceptées.

Il n'y a pas actuellement de définition complète de l'hypnose. La transe hypnotique peut être facilement décrite, mais plus difficilement définie: la transe hypnotique est un état de détente, un état d'attention fixe; c'est une réorientation mentale avec une dissociation entre le conscient et le subconscient; c'est un état de suggestibilité fortement accrue. L'hypnose signifie la capacité d'une personne à répondre à une idée de sorte qu'elle puisse l'utiliser dans sa propre vie. L'hypnose est aussi une forme de sommeil ou encore, selon Pavlov, un réflexe conditionné.

L'hypnotisme n'est pas une panacée, ni un sujet de spectacle; c'est une science, c'est une technique de plus à la disposition du thérapeute.

En ce qui concerne le dentiste, il ne s'agit pas d'utiliser l'hypnotisme en général avec tout ce que cela comporte. Il s'agit simplement d'appliquer certains des effets de l'hypnose, c'est-à-dire ceux qui se rapportent à la dentisterie. La partie de la science hypnotique qui s'occupe de l'application de l'hypnose à la dentisterie s'appelle l'hypnodontie.

L'hypnose n'est pas dangereuse à employer par un dentiste à la condition qu'il la connaisse bien et surtout qu'il en "limite les effets au domaine de sa compétence". Il en est de même pour toutes les sciences utilisées actuellement en art dentaire.

Comment orienter la réaction du public à l'hypnodontie?

Il faudra d'abord, et cela est bien important, que la chose soit bien présentée afin de bien orienter les opinions. Il ne faut évidemment pas laisser croire que tous les dentistes se servent maintenant de l'hypnose et créer ainsi une demande à laquelle on ne pourrait répondre.

Il faudrait dire ceci au public et c'est un des points les plus importants:

"Les dentistes sont au courant des techniques modernes de la suggestion contrôlée et ils étudient actuellement les

possibilités d'appliquer certains de ses effets à la chirurgie dentaire."

Applications de l'hypnodontie

L'hypnodontie a un rôle tout indiqué dans l'exercice de la profession dentaire, car sa fonction est d'annihiler ou de contrôler des facteurs psychiques qui sont sans cesse en éveil au cours des opérations que doit exécuter le dentiste.

Presque toutes les interventions dentaires sont douloureuses et désagréables et le patient doit s'y soumettre à plusieurs reprises et à des intervalles plus fréquents qu'à la médecine ou la chirurgie générale.

De plus, les procédés employés par nos prédécesseurs ont laissé dans le subconscient de notre clientèle des souvenirs pénibles, que se sont transmis les générations.

Pour toutes ces raisons, les traitements dentaires, même de nos jours, taxent le système nerveux des patients.

L'hypnotisme fournit au dentiste des moyens de contrôler cette crainte instinctive et de diminuer l'intensité de ces obstacles psychiques.

Avec l'hypnodontie, les opérations dentaires deviennent moins fatigantes pour le malade et l'opérateur; cette science peut ramener dans le cabinet du dentiste des patients qui les avaient fuis à jamais, ou qui attendent pour y retourner un motif impérieux, comme la douleur, etc.

L'hypnotisme est surtout utile pour les cas suivants:

- 1) Patients nerveux et pusillanimes qui appréhendent les opérations dentaires, spécialement les injections et la chirurgie buccale.
- 2) Patients qui trouvent toujours des excuses pour remettre à plus tard les interventions qui s'imposent.
- 3) Personnes qui ont des nausées fonctionnelles ou psychosomatiques.
- 4) Adolescents et enfants qui sucent leur pouce; personnes qui grincent des dents pendant leur sommeil.
- 5) Par suggestion, on peut provoquer la sécrétion salivaire; de la même façon, il est possible de contrôler le flot salivaire et l'hémorragie capillaire.

- 6) De même, par suggestion post-hypnotique, on aide les patients à mieux tolérer les appareils de prothèse et d'orthodontie.
- 7) Par suggestion post-hypnotique encore, on aide les patients qui négligeraient, à la maison, de pratiquer les conseils pré ou post-opératoires dictés par le dentiste.
- 8) Personnes qui, à cause d'allergie aux anesthésiques ou de déficiences constitutionnelles, ne peuvent recevoir d'injection ou subir l'anesthésie générale.
- 9) La disposition mentale produite par le début de la transe hypnotique se compare à celle amenée par une médication sédatrice. Le système nerveux se relâche et le patient est dans un état psychique confortable. L'opérateur peut contrôler l'intensité et la durée de cette détente nerveuse. Ce contrôle hypnotique a des avantages marqués sur la médication chimique pré-opératoire ou analgésique.
- 10) L'hypnotisme peut remplacer l'anesthésie chimique en gynécologie, en obstétrique et en chirurgie, pour toutes les interventions qui laissent des douleurs post-opératoires.
- 11) L'hypnodontie permet de diminuer la quantité des drogues sédatrices ou hypnotiques aux stades pré- et post-opératoires.
- 12) Les suggestions post-hypnotiques peuvent avoir un effet salutaire sur la guérison ou la réhabilitation, après l'intervention.

Portée morale de l'hypnotisme

Au cours de l'année, le Saint-Père s'est prononcé sur la limitation permise de la douleur. A cette occasion, il a abordé le problème de l'hypnotisme. D'après l'agence Reuters, Pie XII a déclaré que l'Eglise ne s'oppose pas au recours à des moyens artificiels, y compris l'hypnotisme, pour atténuer la souffrance, à condition que soient respectés les principes moraux et religieux. Il a dit que le recours par un médecin à l'hypnotisme, *pour fin clinique*, ne pose pas d'objection. Il a fait observer, toutefois, que les recherches scientifiques dans ce domaine ne doivent être menées que par des spécialistes, compte-tenu des limites morales permises dans toute activité scientifique. L'hypnotisme ne doit pas être pratiqué pour de simples expériences ou même par passe-temps.

On peut lire ces lignes écrites par le docteur Selter dans le *Journal of Hypnosis and Psychology in Dentistry* (vol. 1, avril 1957, p. 24): "La conscience religieuse n'a pas à se faire de scrupules au sujet de l'hypnose. L'Eglise catholique ne s'oppose pas à l'usage de l'hypnotisme pour une fin appropriée; mais elle s'y objecte, quand il s'agit d'amusement ou de vaudeville."

Sur le même sujet, le R. P. Henry Davis, s.j., dans son *Précis de Théologie morale et pastorale* (éd. Sheed and Ward, New York, 1952) déclare: "Il n'y a aucune objection fondamentale à l'hypnotisme utilisé comme agent thérapeutique, mais on ne doit pas permettre à la superstition de s'y insinuer et l'hypnotiseur ne doit pas prétendre posséder des pouvoirs préternaturels. Puisque l'état d'hypnose est un phénomène naturel, il n'y a pas d'objection à s'en servir pour un motif supérieur, pourvu que l'opérateur jouisse d'une excellente réputation et que des témoins soient présents au cours du traitement d'hypnose."

Encore dans le volume "Fundamental Psychiatry" (éd. The Bruce Publishing Company, Milwaukee, 1954, p. 278), écrit par le Dr Cavanagh et le R. P. McGoldrick, s.j., on trouve ces lignes: "Nous sommes d'accord avec l'opinion exprimée par Kelly d'avoir des témoins." Par contre, Kelly déclare à ce sujet: "Il me semble qu'il faut distinguer dans cette nécessité d'avoir des témoins, même fiables. Au cours de certains examens psychiatriques, le patient peut dévoiler des détails qui sont d'une intimité telle qu'il ne voudrait certes pas qu'une tierce personne les entendit. Bien plus, quoique dans leurs considérations sur l'hypnotisme, les théologiens attachent beaucoup d'importance à cette question de témoins, je crois que de nos jours, où les cliniques et les dossiers ont pris le rang qu'on leur connaît, il faille porter l'accent sur le droit du patient à sa vie privée. C'est pourquoi, je ne crois pas qu'il faille poser comme condition expresse cette présence de témoins. Tout dépend des circonstances. Dans certains cas, par exemple,

un témoin sera nécessaire pour sauvegarder la réputation de l'institution ou celle du médecin. Mais si le médecin est consciencieux — et l'on peut supposer que seuls les médecins de bonne réputation exercent dans un hôpital catholique — je ne vois pas la nécessité d'avoir un témoin pour le bien-être du patient."

McGoldrick continue (p. 276, op. cit.): "Cette mesure thérapeutique (l'hypnose) a son utilité. Malheureusement, cette science a tellement été teintée de charlatanisme et de superstition que beaucoup de patients hésitent à s'y soumettre. Il faut donc dire et répéter que l'hypnotisme, contrôlé par des personnes compétentes et subi par des sujets appropriés, est un excellent procédé thérapeutique. L'hypnoanalyse et l'hypnosynthèse sont toutes deux employées de plus en plus avec succès. Le phénomène d'hypnose comporte en son mécanisme encore beaucoup d'inconnu. Cependant son processus n'a rien de mystérieux, ni d'occulte."

"L'opérateur ne doit pas jouir de pouvoirs extraordinaires et le patient ne souffre aucun tort du processus lui-même. Toute personne sérieuse et compétente, ayant reçu une formation adéquate en ce domaine, peut en hypnotiser une autre. Et presque tout individu qui y consent peut être hypnotisé. Théoriquement, cela est vrai. Evidemment, il y a des degrés et je ne parle pas encore des dangers de se faire hypnotiser par le premier venu."

A ce propos, il faut retenir avec soin cette parole du Dr Bernard B. Raginsky, de Montréal, prononcée au Congrès de l'Académie de Médecine psychosomatique, tenu à Chicago, en octobre dernier: "L'hypnothérapie ne doit être pratiquée que par ceux qui ont reçu un entraînement en psychiatrie ou en hypnotisme." Le Dr Raginsky, président de la "Society for Clinical and Experimental Hypnosis," dit qu'il trouve l'hypnotisme très pratique et d'un grand secours pour pénétrer rapidement le subconscient des patients souffrant d'inhibition et de refoulement. McGoldrick poursuit (p. 276): "Personne ne peut être hypnotisé contre sa volonté. Il faut réaliser aussi que personne ne

peut être forcé, sous influence hypnotique, à faire des actions qui lui répugneraient à l'état d'éveil. Par exemple, un individu ne peut être influencé à voler ou à poser des actes indécents, à moins d'avoir un désir réprimé de faire ces choses. Personne, sous influence hypnotique, ne peut se souvenir de choses qu'il n'a jamais connues. L'hypnotisme n'affaiblit pas la volonté et la débilité de caractère n'a rien à voir avec la facilité d'induction. Au contraire, l'intelligence et la volonté d'un individu, toutes choses étant égales par ailleurs, sont en rapport direct avec la facilité avec laquelle il peut être hypnotisé. Remarquons cependant que c'est le sujet qui s'hypnotise lui-même sous la direction technique de l'opérateur. C'est l'expérience, le savoir et l'habileté de l'opérateur (médecin, dentiste, psychiâtre, psychologue) qui doivent déterminer la longueur des séances d'hypnose. L'hypnotisme ne doit pas être employé par ceux qui n'ont pas reçu un entraînement adéquat. Et le but doit être approprié et suffisant. Autant que possible, il faut un témoin."

On peut lire ce qui suit dans un article, "Hypnoanalysis as a Psychotherapeutic Technique" écrit par M. Lindner, Ph D., dans "Specialized Techniques in Psychotherapy" (éd. Gustav Bychowski, M.D. et J. Louise Despert, M.D., Basic Books Inc., New York, 1952): "Ainsi l'hypnotisme redevient à l'honneur à cause de ses principes mêmes — et aussi à cause de ses possibilités jusqu'ici ignorées — pour servir dans la lutte contre la misère humaine.

"L'hypnoanalyse est une saine thérapeutique où se rejoignent l'hypnose et la psychanalyse; l'union de ces deux composantes s'explique théoriquement par leurs caractères communs et se justifie par les avantages évidents que peut donner leur usage judicieux dans des cas choisis avec soin. Dans un grand nombre de cas, à cause de ses avantages, l'hypnoanalyse est devenue le traitement de choix pour le contrôle des dérangements mentaux, pour les phobies et pour certaines formes forcées de neuroses. Des

recherches menées depuis une dizaine d'années ont montré qu'il y a deux contrindications importantes et formelles à l'hypnoanalyse.

"Bien entendu, elles se rapportent à la difficulté ou la facilité avec laquelle on peut hypnotiser le sujet et elles constituent des facteurs qui imposeront des limites à tout clinicien consciencieux.

"A tout prendre, il est vrai que là où la personnalité consciente est divisée ou complètement absente, comme dans la débilité ou la psychose active, l'hypnose est impossible; de plus, elle est aussi dangereuse, même si le sujet — et ce qui est rare — montrait des signes de pouvoir entrer en transe assez facilement.

"C'est pourquoi l'hypnoanalyse suppose comme condition essentielle que le sujet ait une personnalité conciente normale. Cette condition limite son application aux seuls cas qui ne souffrent pas de psychose et même à ceux qui ne sont pas à la veille de psychose, où on note des signes frustrés de disparition de personnalité consciente. ... Il y a alors danger de créer une réelle psychose ou, dans un cas de réelle psychose, de détruire à tout jamais les éléments qui auraient servi à édifier une guérison.

"Son emploi est donc limité aux cas où il n'y a pas de forte homosexualité latente ou, du moins, quand cette homosexualité ne joue pas un rôle important dans leur état. Cela veut dire que les homosexuels manifestes peuvent être hypnoanalysés. Aussi les homosexuels latents qui peuvent contenir leur homosexualité et ceux qui, au début des traitements, découvrent à l'intérieur leur homosexualité latente. Toutefois, il y a un grand nombre d'individus qui ne peuvent contenir ou qui contiennent mal leur homosexualité, de ces types craintifs dont la neurose s'est développée précisément dans un atmosphère intimement lié à cette déformation psychique et de ces malades dont le trouble inconscient est basé sur une homosexualité latente.

"Dans tous ces cas, on ne peut réussir l'hypnose, ou, si on la réussit, elle n'a alors aucune valeur thérapeutique. Il ne

faut pas cependant inclure dans ces catégories certaines classes d'homosexualité latente caractérisée chez les hommes par une féminité marquée, une passivité totale et une aboulie presque complète. Ces cas peuvent être hypnotisés. Les autres ne le peuvent pas: ils ont tellement peur d'être violés qu'ils entretiennent des fantasmagories au sujet d'une attaque possible; ou encore, le souvenir de l'hypnose se mêle confusément dans leur subconscient avec celui d'un assaut.

"Dans le domaine des troubles de la personnalité, l'hypnoanalyse a réalisé des succès considérés comme remarquables dans certains milieux. . . La même constatation a été faite au sujet d'un grand nombre de maniaques, ainsi que d'alcooliques. De même, certaines habitudes étranges, classifiées dans la vaste catégorie des neuroses perverses et impulsives, ont été traitées avec succès par l'hypnotisme. Certaines phobies et certaines tensions ont été guéries plus rapidement grâce à l'hypnoanalyse qu'à la psychanalyse."

Le docteur Harold Rosen, Ph.D., M.D., rapporte certains cas typiques dans son volume "Hypnotherapy in Clinical Psychiatry" (éd. The Julian Press Inc., New York, 1953, p. 137, 144, 179, 230) Contre-indications: "Les problèmes qui se posent appartiennent en grand majorité à la soi-disant médecine psychosomatique." "Cette jeune fille souffrait de schizophrénie et avait grand besoin de traitements psychiatriques. Elle ne fut pas hypnotisée quoiqu'on nous l'ait référée pour savoir si elle pouvait être traitée par cette méthode et jusqu'à quel point."

"On nous réfère de plus en plus des patients pour qu'on les traite en clinique avec l'hypnose, quoique l'histoire de cas révèle sans l'ombre d'un doute des réactions subconscientes de schizophrénie. Ces patients, d'une façon générale, sont capables de s'adapter aux obligations sociales hors d'une institution. Nous croyons que la plupart des patients de ce genre ne peuvent traités par l'hypnose que dans un hôpital. Une caractéristique de ces patients, c'est qu'ils passent de

chirurgien en chirurgien, d'un hôpital à l'autre, pour se faire opérer, montrant par là leur désordre émotionnel inconscient.

"J'ai eu réellement peur quand ce paranoïaque mit la main dans sa poche. Heureusement, ce problème ne s'était jamais posé, du moins pour moi, à l'occasion d'un traitement sous hypnose. Je ne pouvais me sentir en sécurité en hypnotisant un paranoïde ayant un revolver sur lui! En fait, le seul paranoïde que j'aie hypnotisé était un bibliothécaire muet. J'employais l'hypnotisme seulement pour un diagnostic, mais, même dans ce but, je crois que c'était une erreur. Quand je traite des paranoïdes qui retournent ensuite chez eux, je n'aime pas les hypnotiser à mon cabinet particulier. Pour cette raison, je crois que l'emploi de l'hypnose pour des paranoïdes est non seulement à déconseiller, mais à contre-indiquer.

"Ces cinq cas où nous avons eu de la difficulté à fixer les séances d'hypnose ne peuvent pas se comparer aux problèmes soulevés par des patients qui ne voulaient pas laisser le bureau après l'heure de traitement. . . Autant que nous pouvons le voir, ce problème n'en est pas un d'hypnose, mais un de psychothérapie."

Techniques d'hypnodontie

L'hypnodontie crée au sein de la profession dentaire une nouvelle discipline dont bénéficie l'humanité souffrante. Qui dit discipline sous-entend entraînement scientifique, possession des principes, expérience clinique. Comme toutes les autres sciences, l'hypnotisme n'est pas affaire d'improvisation; elle ne peut s'employer par un dentiste qui, par exemple, n'aurait lu qu'un bouquin de vulgarisation. Elle suppose une formation et une poursuite continuelle des études en ce domaine. L'opérateur devra savoir faire un choix de ses sujets, cette sélection demande de l'expérience.

Les patients sur qui le dentiste désire pratiquer l'hypnotisme doivent être ap-

prochés avec un tact tout psychologique. La plupart des sujets hésitent à se soumettre à ce procédé: ils y voient des rapports assez lointains avec l'exercice de la profession dentaire. On concède au médecin une plus grande part dans le domaine de la suggestion: repos, voyages, air des montagnes, etc. même éloignement de son épouse pour un certain temps! Le public ne reconnaît au dentiste que la faculté de traiter une partie bien spécifique de l'organisme humain. Il fait de la bouche une entité distincte dans l'économie physiologique, sans aucune relation avec le cerveau, le cœur, l'estomac, les reins, le foie, etc. Par contre, on est porté à accorder au médecin beaucoup de latitude pour ce qui est des conseils ou prescriptions. Le patient acceptera beaucoup mieux les suggestions de son médecin que celles de son dentiste.

Plus on fera connaître l'hypnodontie en l'utilisant avec maîtrise dans des cas appropriés, plus diminuera l'appréhension populaire à l'égard d'une méthode reconnue pourtant depuis des siècles. L'emploi éclairé et consciencieux de cette science réussira à la longue à dissiper les préjugés du public à son endroit et peut-être aussi le scepticisme de certains confrères. Il est temps que ce mesmérisme cède la place à des principes plus favorables à notre évolution.

Tout individu normal se soumet à des suggestions qui lui paraissent raisonnables. Seuls les êtres anormaux refusent ces suggestions et, inconsciemment, ils en souffrent. Ces gens bien intentionnés perdent leur temps et se fatiguent mentalement en des analyses critiques des idées qui leur sont soumises et du climat dans lequel elles sont faites. Le jugement et la critique ont certes une place dans les agissements et les pensées des hommes, mais ceux qui spontanément et naturellement sont toujours "contre" ont peu de temps à leur disposition pour agir: ils sont trop pris par leurs analyses.

Les médecins et les dentistes font souvent de l'hypnotisme sans le savoir. . . Comme M. Jourdain faisait sa prose! En effet, leurs suggestions déterminent

souvent une acceptation sans critique de la part de leurs clients. Il y a alors hétéro-suggestion. En d'autres cas, c'est le sujet lui-même qui fait ce travail spontanément: c'est ce qu'on appelle l'auto-suggestion. Un exemple: la crainte de bégayer aura pour effet d'aggraver le bégaiement. Lorsque la suggestion est acceptée, elle se manifeste par l'une des trois façons suivantes: une impulsion motrice ou sensorielle se produit; une attitude mentale s'établit; ou la personnalité est affectée par un trait ou une émotion.

Maintenant, si nous n'allons pas de l'avant, nous allons une fois de plus perdre l'initiative que nous avons été les premiers à prendre. Une fois de plus, nous suivrons les médecins . . . loin en arrière. La médecine a fait un grand pas en reconnaissant de plus en plus les interrelations de l'esprit et du corps. N'ayons donc pas peur d'élargir nos horizons! Nous retirerions un grand profit dans notre travail à nous inspirer de la médecine psycho-somatique. Il n'est pas sage de notre part de travailler sous tension et encore moins d'avoir un patient tendu tout le temps qu'il est sur la chaise. . . Aussi l'essentiel des techniques consiste d'abord à détendre le sujet, à concentrer son esprit pour ensuite faire les suggestions appropriées en jouant sur son imagination. La suggestion d'un relâchement musculaire favorise l'état du malade et facilite grandement le travail de l'opérateur. Donc: détente de l'esprit et du corps.

Choisissons de préférence les patients qui sont allergiques à la novocaïne, ceux qui sont extrêmement tendus, anxieux et craintifs. Quant aux autres, vous serez toujours libre de choisir vous-même le "modus operandi". Ce n'est pas au client de déterminer l'emploi de tel ou tel anesthésique dans votre bureau.

Ensuite, il convient de créer ce qu'on appelle le "mental set". Il faut d'abord faire disparaître tous les préjugés du sujet en répondant à ses questions. Si le patient comprend bien ce que vous attendez de lui, il se prêtera davantage à la coopération, dans une passivité com-

plète, et vous obtiendrez plus rapidement l'état de transe. Le sujet doit être convaincu que cet état ne change en rien sa personnalité, ni pendant, ni après.

Il existe deux sortes d'approches. Il y a la paternelle: approche vigoureuse, dominiatrice, où le sujet est mis en transe par la crainte; c'est celle des hypnotiseurs publics. Nous ne nous y attarderons pas. La deuxième, c'est la maternelle: approche berçante, pacifiante et calmante, où le sujet descend paisiblement et avec plaisir dans l'état de transe. Seule cette méthode convient à nos intentions.

Il y a quatre facteurs importants d'induction:

- 1) limitation de la perception sensorielle et du rendement moteur;
- 2) fixation de l'attention;
- 3) répétition d'une stimulation monotone;
- 4) établissement d'un rapport émotif entre l'opérateur et le sujet.

On conseille donc d'exclure tout stimulus externe susceptible de faire naître des associations ou n'importe quelle activité mentale: bannir toute distraction. L'activité motrice est limitée en faisant asseoir ou coucher le sujet confortablement.

L'attention est fixée à un niveau visuel et auditif: un point et la voix du même opérateur.

L'esprit ainsi concentré, la suggestion est répétée d'une façon monotone afin de franchir le conscient pour atteindre l'inconscient.

Le sujet peut ensuite être sensibilisé de plus en plus.

L'hypnotisme réussira à condition que le sujet soit bien convaincu et veuille se soumettre aux suggestions de l'opérateur. Si un insuccès se produit, il sera dû à sa propre résistance et non à la technique.

Outre cette approche ouverte, il y a l'approche déguisée au moyen de médicaments tels que séconal, equanil, etc.

Voici quelques tests correspondant à la première phase d'induction: chute en arrière, passivité de la main et du bras, "hand clasp", "eye catalepsy", etc.

Comme on l'a déjà noté, à peu près tout individu normal peut être hypnotisé.

Voici un tableau qui répond assez exactement à cette question, quoique sujet à de légères variations:

Hypnoidaux	15%
Trance légère	25%
Trance moyenne	35%
Trance profonde	25%

On connaît différentes techniques d'induction en transe comme, par exemple, la fixation directe dans les yeux. Celle, qui apparemment donne les meilleurs résultats est la détente musculaire complète: on demande au patient de fixer un point quelconque au plafond et de compter mentalement de 100 en descendant. La suggestion de détente et de pesanteur dans les membres est basée sur la réalité. Si elle est faite avec des pauses assez longues, (10 secondes), le sujet pourra réaliser la détente au fur et à mesure qu'elle se produit, et ainsi participer davantage à son hypnotisme. On peut citer en outre la méthode du "Coin Technic", le "Hand Levitation", la méthode de Visualisation, pour enfants et adultes.

Quant aux suggestions post-hypnotiques, elles doivent être soumises durant l'état de transe. Elles peuvent porter sur les appréhensions futures. . . C'est aussi le moment d'inculquer au sujet des habitudes d'hygiène buccale.

La principale utilisation de l'hypnotisme en art dentaire est de procurer une détente favorable à nos patients. Mais pour les patients capables d'entrer en transe profonde ou du moins en transe moyenne, l'hypnotisme peut aussi constituer une anesthésie qui suffit à elle seule, ou qui prépare à l'anesthésie chimique. Ces phénomènes sont faciles à expliquer: par la suggestion, on crée une anesthésie naturelle: si l'on pique la gencive par exemple, la douleur n'est pas ressentie à cause de l'impression subjective d'anesthésie chez le patient. Objectivement, le traumatisme existe, mais le patient est distrait par l'anesthésie suggérée et n'en perçoit pas la douleur.

Disons enfin que l'hypnodontie n'est

pas une panacée; elle n'est pas appelée à remplacer les autres méthodes, ni les anesthésies chimiques. Seulement, à l'occasion, elle peut rendre de grands services. Qu'on s'en serve pour enlever la crainte ou la tension, procurer une

détente ou, comme on l'a dit, créer une anesthésie propice au fraisage des dents, quelquefois même à la chirurgie buccale! C'est un attribut de plus à notre profession, comme un bon instrument qui peut servir au moment opportun.

Vient de paraître

A. MARMASSE. — Dentisterie opératoire. Tome II. Dentisterie restauratrice. Un volume de 556 pages avec 720 figures dans le texte. In Bibliothèque du Chirurgien-Dentiste. J. B. Baillière et Fils, Éditeurs, 19, rue Hautefeuille, Paris (6e). En vente à la S.P.M.D., 16, rue Vignon, Paris (9e), C.C.P. Paris 465-13. Prix, cartonné: 4.600 fr., broché: 3.800 f. + 210 F. port et emballage.

Pour des gens de culture française, c'est une bonne nouvelle. Voilà un traité de dentisterie restaurative écrit en français, par un français qui semble avoir lu tous les auteurs sérieux et dont la longue expérience le rend propre à discerner l'excellent du bon et du médiocre. A. Marmasse, il le dit lui-même, force son lecteur à remonter aux sources de la dentisterie moderne. Il se base en effet sur les données de Black. Il l'interprète à la perfection, le complète, le modernise au besoin, jamais ne le trahit. Il est à date, traite des plus récentes techniques. Il permet d'oublier enfin qu'il faut toujours puiser dans la littérature américaine. Il est d'une lecture facile, voire même amusante tant on sent percer à travers sa phrase scientifique l'humour et la finesse d'esprit d'un français du meilleur cru. Son traité est abondamment illustré et d'une façon claire. Dans la terminologie, il s'éloigne de la tendance de certains auteurs français qui semblent s'accommoder trop facilement d'emprunter aux langues étrangères pour se donner des airs de polyglottes. Sauf dans certains cas où une traduction serait trahisse, il sait trouver le terme français précis et descriptif. Pour nous, c'est la chance d'acquérir un vocabulaire français en dentisterie. Nous souhaitons un franc succès au volume de Marmasse.

Jean Yergeau, D.D.S.

CONGRÈS DE L'ASSOCIATION DENTAIRE CANADIENNE

organisé par la Société Dentaire de Montréal
à l'Hôtel Reine Elizabeth de Montréal

les 26, 27, 28, 29 octobre 1958

Les dentistes de Hull forment une société dentaire

La Société dentaire de Hull, nouvellement formée dans le but de permettre aux membres de la profession de se mieux connaître et aussi de discuter des problèmes communs, a tenu sa première réunion à l'hôtel Saint-Louis.

La Société groupe tous les dentistes de Hull et de la région de l'ouest du Québec. Lors de sa fondation, il y a un mois, elle s'est choisi un exécutif composé comme suit: les docteurs W.-A. Parent, président, Carroll Laurin, vice-président, Horace Caza, secrétaire, et E. Quevillon, trésorier. Les directeurs élus sont: les docteurs A. Vienneau, de Gatineau, L. Courtemanche, de Maniwaki, G. Allaire, de Buckingham, J.-L. Lévesque, de Hull, et F.-P. Dumais, d'Aylmer.

Après le dîner, les membres ont jeté les bases des règlements de la société et ont formé différents comités.

L'assemblée terminée, tous se rendaient au bureau du Dr Augustin Rochon pour une démonstration d'un nouvel appareil dentaire donné par le Dépôt dentaire Limitée, de Montréal.



Comité exécutif de la Société dentaire de Hull

De g. à d.: les docteurs E. Quevillon, trésorier; H. Caza, secrétaire; C. Laurin, vice-président; W. A. Parent, président.

ÉDITORIAL

La place occupée par la dentisterie au Canada

Le Comité des Relations extérieures de l'Association dentaire canadienne fera tenir bientôt à chaque dentiste du pays une lettre qui a beaucoup d'importance pour l'avenir de notre profession.

Cette communication traite du recrutement des dentistes au Canada. La situation est grave et l'exercice de la dentisterie devra dans un avenir rapproché subir des modifications capitales, à moins que les dentistes contemporains ne se préoccupent de recruter eux-mêmes des étudiants en chirurgie dentaire.

Que font individuellement les dentistes du Canada pour augmenter leur nombre?

On semble se fier aux organismes déjà établis pour attirer dans notre profession une quantité de jeunes gens en nombre suffisant pour répondre aux besoins de la population. La baisse considérable dans le nombre des jeunes qui s'inscrivent dans les facultés dentaires est peut-être due à l'inaction des dentistes en face de ce problème.

Il y a une vingtaine d'années, quand la population du Canada se chiffrait à un peu plus de onze millions, il y avait un dentiste pour 2,672 habitants. Cette proportion est maintenant descendue à un dentiste par 2,981 personnes. Le rapport s'est abaissé plus soudainement que ne le montrent ces chiffres. En effet, en 1953, la proportion des dentistes se trouvait être de 1 pour 2,686, à peu près la même qu'en 1938.

Mais au cours des cinq dernières années, un changement rapide s'est produit pour le pire. Cette situation est due à deux facteurs: augmentation de la population et statu quo dans le nombre des nouveaux diplômés.

Le Canada est un pays jeune, riche et vigoureux. On peut donc prévoir que sa population augmentera encore. La politique d'immigration pratiquée par le gouvernement de ce pays, l'accroissement naturel de la population indigène et la tendance socialisante de l'Etat favorisent l'accroissement de la population de notre pays. Il faut lui fournir de nouveaux dentistes et la majorité d'entre eux viendra des facultés dentaires canadiennes. Le rythme actuel des nouveaux diplômés est plutôt décourageant.

Voici des statistiques illustrant la différence existant entre le Canada et d'autres pays:

Pays	Proportion des dentistes en rapport avec la population	Nombre des nouveaux diplômés en 1957, par million de population
Suède	1 : 1700	38
Etats-Unis	1 : 1671	19
Canada	1 : 2934	11

Comme on le voit, le Canada, qui a le plus faible pourcentage de dentistes, présente par contre le moins de nouveaux diplômés. Les universités canadiennes manquent-elles d'élèves? Non pas. Les classes sont partout remplies. Mais le nombre des étudiants

n'augmente pas au même rythme que la population. A plusieurs reprises, l'Association dentaire canadienne a déploré officiellement les lacunes qui empêchent les facultés dentaires de recevoir un plus grand nombre d'élèves. Cette situation devrait se corriger dans un avenir rapproché.

Il y a cinq facultés dentaires au Canada et une sixième est à s'organiser au Manitoba. Les facultés de Toronto et de Dalhousie sont à construire de nouveaux édifices qui leur permettront d'accueillir un plus grand nombre d'étudiants.

L'Association compile tous les ans des statistiques sur les inscriptions dans les universités et ces chiffres montrent qu'actuellement les écoles dentaires peuvent accepter environ deux cents nouveaux élèves. Très bientôt, les six facultés dentaires pourront accommoder plus de trois cents étudiants en première année. Y aura-t-il un nombre suffisant de candidats qualifiés pour remplir ces classes? Seuls les dentistes peuvent faire beaucoup pour apporter une réponse à cette question.

Comment trouverons-nous les jeunes gens et les jeunes filles susceptibles de renforcer nos rangs, si les dentistes eux-mêmes se désintéressent du problème?

Il y a quelques 5,500 dentistes au Canada aujourd'hui et 50% de ces dentistes ont plus de cinquante ans. On peut donc s'attendre à ce que s'aggrave d'ici dix ou vingt ans la proportion du nombre des dentistes en rapport avec la population, à cause des décès et des retraites.

Une profession exerce une influence dans la vie d'une nation, quand elle est suffisamment nombreuse pour rendre à la population les services dont celle-ci a besoin. Un pays maintient son équilibre économique dans tous les domaines quand l'offre répond à la demande. Il en est de même pour les services comme pour les marchandises.

Si la profession dentaire ne peut pas suffire à la demande, le gouvernement, par un système quelconque d'assurance sociale, prendra en mains le problème et nous risquons fort de perdre la liberté dont nous jouissons.

De plus, les techniciens ne sont pas sans se rendre compte de la diminution du nombre des dentistes par rapport à la population et ils redoublent d'effort dans certaines provinces en réclamant de plus grands privilèges pour servir directement le public.

Il faut que notre groupe professionnel garde le rang qu'il s'est gagné dans la société et même qu'il l'améliore davantage. Ce souhait se réalisera à la seule condition d'augmenter le nombre et la qualité de ceux qui, demain, feront la relève des dentistes d'aujourd'hui. On allègue que les jeunes gens choisissent des carrières plus rémunératrices; qu'il se dirigent vers les affaires et l'industrie, parce que l'essor que prend le Canada dans ces domaines est un signe des temps.

Mais la chirurgie dentaire donne des consolations qui compensent pour la modicité de ses revenus. Songeons au plaisir qu'éprouve toute âme bien née à soulager un être qui souffre; à la reconnaissance visible d'un patient, qui, grâce au dentiste, a recouvré son langage et ses traits normaux; rappelez-vous cet enfant, dont vous avez su gagner la confiance et qui maintenant ne jure que par vous.

La profession dentaire assure à la population un service de santé de première importance et des horizons nouveaux s'ouvrent devant elle dans les recherches et l'hygiène publique. Les dentistes sont tous fiers de leur profession et cette fierté doit se traduire par l'enthousiasme qui les anime, quand ils en parlent.

Si seulement 10% des dentistes actuels réussissent par leur ardeur communicative à décider un jeune homme ou une jeune fille à se diriger chaque année vers les études dentaires, déjà le problème du recrutement devient beaucoup moins aigu.

La profession est alors en mesure de se défendre contre un état d'esprit dangereux pour elle et qui est en rapport étroit avec le nombre des dentistes au Canada.

Gérard de Montigny

Nouvelles de l'Association

Statistiques au sujet des dentistes au Canada

Les registraires des provinces ont encore collaboré cette année à la préparation des statistiques annuelles au sujet des dentistes du Canada. Les faits saillants de cette compilation sont les suivants:

- Le nombre des dentistes au Canada a augmenté de 83 unités durant 1957. (La population du Canada a augmenté d'environ 500,000 âmes durant l'année).
- La proportion du nombre des dentistes par rapport à la population s'est encore abaissée: de 1/2,934 qu'elle était, il y a un an, elle est maintenant de 1/2,981.

—La Colombie britannique a le meilleur quotient de dentistes (1/2,360).

—En comparaison avec l'année dernière, la proportion des dentistes par rapport à la population s'est légèrement améliorée en Alberta, en Saskatchewan, Ile-du-Prince-Edouard et Terre-Neuve; elle s'est aggravée dans les autres provinces.

—Le Manitoba et la Saskatchewan ont moins de dentistes qu'en 1938.

—L'augmentation des spécialistes est plus considérable que jamais.

TABLEAU I
DENTISTES EXERCANT AU CANADA

Province	Nombre de dentistes			Changements en 1957				*Comparé avec 1938	†Proportion quant à la population
	Hommes	Femmes	Total	Décès	Retraites	Additions	Déménagés		
T.-N.....	39	2	41	2	0	5	2	+22	1/10390
I.-du-P.-E....	34	0	34	0	0	2	2	+4	1/2913
N.-E.....	188	3	191	2	3	7	4	+22	1/3675
N.-B.....	124	1	125	0	2	4	0	+15	1/4520
P. Qué.....	1303	3	1306	15	15	49	3	+432	1/3643
Ont.....	2329	41	2370	33	24	103	10	+438	1/2372
Man.....	244	2	246	8	3	19	7	+5	1/3496
Sask.....	207	2	209	4	0	7	5	—1	1/4206
Alberta.....	406	6	412	3	0	29	9	+176	1/2816
C.-B.....	623	7	630	4	8	27	2	+268	1/2360
Total.....	5,497	67	5564	71	55	252	44	+1371	1/2981

* Ces chiffres indiquent l'augmentation ou la diminution du nombre des dentistes par rapport à 1938.

Basés sur les chiffres de la population publiés par le Bureau fédéral de la Statistique, le 1er juin 1957.

TABLEAU II
MIGRATION DES DENTISTES CANADIENS EN 1957

à:	T.-N.	I.-du-P.-E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alberta	C.-B.	E.-U.	G.-Bret.	Australie	Europe	Inconnu	Total
de: T.-N.....	—	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2
I.-du-P.-E....	0	—	0	0	0	2	0	0	0	0	0	0	0	0	0	2
N.-E.....	1	2	—	0	0	1	0	0	0	0	0	0	0	0	0	4
N.-B.....	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	3
P. Qué.....	0	0	0	0	—	1	0	0	0	0	0	0	0	2	0	10
Ont.....	0	0	2	1	0	—	3	0	0	2	1	0	1	0	0	7
Man.....	0	0	0	0	0	3	—	2	0	1	0	0	0	0	0	5
Sask.....	0	0	0	0	0	0	3	—	2	0	0	0	0	0	0	5
Alberta.....	0	0	0	0	0	0	5	2	—	1	1	0	0	0	0	9
C.-B.....	0	0	0	0	0	0	0	0	—	2	0	0	0	0	0	2
Total.....	1	2	3	1	0	7	11	4	2	4	4	1	1	2	1	44

TABEAU III
NOMBRE DE SPECIALISTES PAR PROVINCE

(seuls les dentistes qui consacrent tout leur temps à l'exercice de leur spécialité.)

	T.-N.	I-du P.-E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alb.	C.-B.	Total
Orthodontie.....	0	0	2	1	16	50	5	2	8	9	93
Chirurgie.....	0	0	2	0	6	34	7	0	5	7	61
Périodontie.....	0	0	0	0	3	13	0	0	0	3	19
Pédodontie.....	0	0	0	0	0	6	0	0	3	7	16
Total.....	0	0	4	1	25	103	12	2	16	26	189

TABEAU IV
NOMBRE DE DENTISTES EMPLOYES DANS LES SERVICES DE SANTE

	T.-N.	I-du P.-E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alb.	C.-B.	Total
Facultés dentaires (personnel enseignant)											
Plein-temps.....	0	0	3	0	14	12	0	0	3	0	32
Demi-temps.....	0	0	0	0	0	9	0	0	9	0	18
Service hospitalier											
Plein-temps.....	0	0	3	2	0	20	0	3	3	0	31
Demi-temps.....	0	0	0	0	0	7	0	0	0	5	12
Service scolaire											
Plein-temps.....	0	0	1	2	0	28	1	1	4	0	37
Demi-temps.....	0	0	3	1	0	58	3	1	4	0	70
Service de santé											
Plein-temps.....	2	2	2	1	25	20	2	7	2	26	89
Demi-temps.....	0	0	0	0	0	0	0	0	0	2	2
Total: Plein-temps.....	2	2	9	5	39	80	3	11	12	26	189
Demi-temps.....	0	0	3	1	0	74	3	1	13	7	102

TABEAU V
NOMBRE TOTAL DES DENTISTES EMPLOYES PAR LE GOUVERNEMENT
 (plein-temps)

Ministère des Affaires des Vétérans.....	37
Ministère de la Défense nationale.....	168
Ministère de la Santé nationale et du Bien-Etre social.....	15
Total.....	220

Comme pis aller, l'édenté accepte le dentier

par PAUL-E. POITRAS, D.D.S., Montréal

Le médecin, dans l'exercice de ses fonctions, recherche les symptômes qui relèvent d'un trouble organique; son diagnostic établi, il traite le malade sans s'occuper de la nature de son âme, alors que le dentiste, en plus d'un diagnostic, aura à juger de la disposition bonne ou mauvaise du patient. A mon avis, le personnage d'une suprême perfection, disons le patient idéal, serait cet individu qui supporte, sans se plaindre, les inconvénients d'un corps étranger, placé à demeure dans la bouche; ne demande jamais une correction à moins d'une douleur aiguë; accepte comme indispensable l'ensemble des traits remodelés de son visage; louange l'habileté et la science du praticien; acquitte aimablement sa note.

Au contraire, le mauvais patient serait cette personne qui, sans raison, se désole d'une condition d'abord pénible et incommode, résultat d'une prothèse non encore adaptée; marque son mécontentement à la vue du changement d'aspect de sa physionomie subi à cause de la perte de ses dents; trouve les honoraires trop élevés et cherche un moyen de ne pas acquitter une dette sciemment contractée; en un mot, celui qui refuse de reconnaître les mérites du praticien après le service rendu.

J'ai dit et répété en toutes circonstances combien il m'était agréable de disposer des dents artificielles sur une base de cire, de les engrener à l'aide d'un articulateur anatomique, de voir à ce que la prothèse soit parfaitement finie. Je crois au plaisir de travailler un dentier avec d'autant plus d'agrément que le patient, à qui la pièce est destinée, soit un sujet favorable.

Tous les prothésistes, soit dans les conférences, soit dans les congrès, soit dans les cours post-universitaires, commentent leurs succès; les prothèses qu'ils confectionnent s'adaptent convenablement aux muqueuses buccales, etc. Bref, leur travail est impeccable!

J'ai grandement profité des enseignements de ces chefs de file, mais leur enseignement teinté d'idéalisme, n'a pas toujours convaincu un vieux routier comme moi. Ces surhommes se penseraient-ils d'essence divine? Ils sont sujets à commettre des erreurs comme tout le monde. "Errare humanum est". Intelligents, ils savent manier l'ironie, ils ont des trouvailles merveilleuses et se croient infailibles. Leurs dentiers ont des défauts, une retouche serait parfois utile. Qui les désapprouverait de ne pas raconter leurs bévues? Les connaissances de la confection des pièces de prothèse partielles ou complètes leur apportent souvent des succès; cependant ils ne mentionnent jamais leurs échecs. Ils pensent comme beaucoup: "Seigneur! préservez-moi de mes amis, je me charge de mes ennemis".

Il est reconnu que les ouvriers n'apprennent pas aussi facilement, les uns que les autres, les secrets d'un métier. Tous n'ont pas la même disposition. Le patient édenté doit se résigner à porter un dentier partiel ou complet et obtiendra un confort dans la mesure où il peut s'adapter à une nouveauté. Des spécialistes ont reconnu qu'un grand nombre de dentiers pourraient être corrigés et donner ainsi plus de confort à leur possesseur.

Les laboratoires dentaires commerciaux, à cause d'intérêts pécuniaires, emploient constamment des articulateurs

à charnière et semblent ignorer la nécessité des articulateurs anatomiques. Pourquoi leur jeter la pierre! Ils ne sont pas les vrais coupables! Ils reçoivent des empreintes plus ou moins exactes, prises d'une façon routinière et insouciance, des occlusions enregistrées empiriquement sur un boudin de cire où aucune dimension n'est indiquée. De ce manque de soin, le plus mauvais peut arriver. Le dentiste voudrait une pièce de prothèse parfaite qu'il pourrait livrer à l'intéressé sans aucune retouche alors que le succès obtenu par une meule vaudrait l'effort exigé. La majorité des édentés tolèrent les défauts de leurs pièces aux dépens de la résorption des crêtes alvéolaires, de l'articulation temporo-maxillaire et des muscles de la mastication. Les chocs produits par une dent mal engrenée sont au début imperceptibles, mais, après des mois d'usure, le dentier se brise; les troubles, d'abord négligables, deviennent plus graves et laissent la nature reprendre ses droits en permettant à la mâchoire inférieure de continuer nor-

malement ses mouvements de mastication et de phonétique.

Un dentier terminé ne veut pas dire un dentier fini. Une fois mis dans la bouche, celui-ci devra être corrigé par des perfectionnements indispensables dont le nombre sera en raison directe de l'habileté du praticien et de l'application apportée aux détails.

Les chirurgiens-dentistes ont le devoir strict, s'ils ne veulent pas être appréciés à l'égal des *odontotechniciens*, d'examiner toutes les imperfections des prothèses, d'éliminer avec précision et minutie leurs défauts et de faire véritablement acte d'expert. Ce n'est qu'à cette condition que nous ne manquerons pas d'obtenir chaque fois un succès.

Les amendes, la prison n'ont jamais empêché les hommes d'éluder la loi quand ils y voient le moyen d'augmenter leur salaire. L'*odontotechnicien* courra le risque de subir les rigueurs du code, se moquera des chirurgiens-dentistes pour vendre à des naifs des pièces de prothèse plus ou moins ajustées.

Janvier 1958

Acquisitions récentes de la bibliothèque

ARCHER, W. H.: Oral Surgery Directory of the World. 1957. 298p.

ASTRA PHARMACEUTICALS (CANADA) LTD.: An outline of the chemistry pharmacology and clinical uses of xylocaine. 1957. 63p.

GOLDMAN, H. M., and COHEN, D. W.: Periodontia. 4th ed. 1957. 535p. illus.

PEDIATRIC CLINICS OF NORTH AMERICA: Symposium of the child's mouth. Julius B. Richmond, consulting editor. Nov. 1956. 1137p. illus.

TALLGREN, A.: Changes in adult face height due to ageing, wear and loss of teeth, and prosthetic treatment. 1957. 122 p. illus.

TAUBER, R.: Basic surgical skills; a manual with appropriate exercises. 1955. 75 p. illus.

THE J. M. NEY CO.: Practical application of hydrocolloid for fixed bridgework. 1953. 112 p. illus.

THE J. M. NEY CO.: Planned partials; the combined edition of the Ney Surveyor book, and the Ney Partial denture book. 1955. 168 p. illus.

THE J. M. NEY CO.: The Ney Chayes Technic; the mechanics of building movable-removable restorations with Ney Chayes attachments. 1955. 60 p. illus.

THE J. M. NEY CO.: Ney Bridge and inlay book. 1955. 161 p. illus.

THE J. M. NEY CO.: The Ney gold handbook. 1956. 62 p. illus.

TRAVIS, L. E. Ed.: Handbook of speech pathology. 1957. 1088p. illus.

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Adult Orthodontics and the General Practitioner*

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No adult is too old to have his teeth straightened. This statement may sound startling, but strange as it seems it was made in substance by Kingsley in 1880.⁽¹⁾ Until recent years, however, little orthodontic treatment was performed on adults. Now, modern dentistry has created a demand for adult treatment because tooth position has assumed an ever increasing important role in dentistry. Each specialty of dentistry has begun to realize more fully the importance of the proper inclination of the individual teeth in their respective jaws as well as the importance of good occlusion.

The periodontist every day sees many patients in whom the supporting structures have been lost because of traumatic occlusion and faulty tooth position. Likewise, the prosthodontist and general practitioner observe the importance of proper tooth position in order to do good dentistry and maintain a good natural dentition. Therefore, we can no longer think simply in terms of filling or extracting a tooth or replacing it with a bridge. It is necessary for us to think instead of the service that we can render

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in the overall picture of a patient in order that he may have a healthier and happier life.

Today, dentistry has become more specialized and we have endodontists, oral surgeons, orthodontists, paedodontists, periodontists, prosthodontists and others. However, the great majority of the population is still taken care of by the general practitioner. Unless a man who specializes in any field of dentistry keeps up with dentistry itself in all of its branches, he soon becomes a "way-side" specialist. He must keep up with all that's going on in dental science along with his own specialty in order to be in position to perform the service to which his patient is entitled.

Equally, does this apply to the general practitioner, perhaps even more so. His is a great responsibility for he must be well acquainted with all of the phases of dentistry in order to best advise his patient. Although it is not necessary for the dentist to do the laboratory procedure for each denture or bridge he inserts, it is necessary that he know what he wants from the technician and be able to decide whether the restoration or denture is properly designed and finished. So, too, must the general practitioner be in a similar position in regard to the various specialties of dentistry. If he feels himself qualified to do any or all of them, then of course he is so entitled. However, even if he does not desire to do so, he still must be well acquainted with the fields so as to know what can be accomplished for a particular case. Only then can he best advise his patient. For this reason, I feel the subject presented here should be of special interest. A review of programs given before dental societies throughout the country shows this field is greatly neglected by the general dentist.

In this discussion of tooth movement, the procedures here have been confined to the treatment of adults since this is where there seems to be most opportunity for the general practitioner to incorporate such procedures as part of

his routine treatment of the patient. Of course, certain similar conditions in the younger patients can be handled in a like manner. Tooth movement in the adult has been sadly neglected and persons have gone through life unhappy and discontent when they could have been helped.

This essay has been divided into two major divisions. In the first, several adult cases where major orthodontic correction has been performed will be presented. In the second, minor tooth movement cases and simple ways of securing such movement in order to gain satisfactory aesthetic and functional results will be shown.

I feel it just as important for the general practitioner to know what type of malocclusion problems can be corrected by the dentist who is specially trained as it is for him to be able to perform certain services himself. It is important that one know what type of problems requires more complicated treatment procedures as well as those which can be treated in a simple manner. Most well qualified dentists can, in a moment, look into a mouth and decide whether the patient has previously had good dentistry. For the most part, these same dentists are frequently at a loss when judging orthodontic treatment.

Dentists who cringe when they see mouths with evidence of very poor dentistry, are frequently not concerned as to whether or not an orthodontic result on one of their patients is acceptable. It seems to me that the qualified general practitioner of dentistry must be aware of the recent advances in all branches of dentistry, including orthodontics. The health of the patient's mouth is his responsibility long after the orthodontic treatment is completed. He should be able to discuss with the orthodontist the problems involved and demand for his patient a high calibre of treatment.

Over the years the general practitioner sees many patients who have received orthodontic treatment. I feel it is his place to let the dental profession know what

type of orthodontic service has been worthwhile. He should let it be known whether or not major relapse has constantly occurred with certain plans of treatment. He should answer the following questions: Is more or less periodontal injury present after certain types of orthodontic treatment? Have the facial lines of the patient been improved or made worse? Have the teeth been fanned out to a double protrusion state? All of these questions should be considered by the thoughtful general practitioner, when deciding upon an orthodontist for patient referral.

There are many adults who have gone through many years of unhappiness because of crooked teeth or malocclusion causing a facial disfigurement or unpleasant smile. Many of these people were perhaps financially unable to secure orthodontic service as children. Others were told that even at the age of 16 they were too old for orthodontic service. So they continued on with their deformity not knowing it could be corrected.

The field of orthodontics, as it is practised today by the outstanding men in the profession, is relatively new. Thus new ideas are constantly being implemented in methods of treatment. Surveys made only a few years ago indicated that only a handful of orthodontists did any appreciable amount of treatment for adults⁽²⁾. Most orthodontists have been kept busy taking care of the children and young adults, so it is understandable how and why orthodontic treatment of adults has been neglected. Few men investigated the field, and it generally became accepted that orthodontic treatment was only for those up to the age of 15 or thereabouts.

For the past several years, I have been particularly interested in adult treatment and have treated over a hundred cases, going up to the age of 55 for major correction and age of 67 for minor movement. The reasons these people wanted treatment were varied. Many because they had suffered mental anguish

for years because of a bad protrusion causing a facial deformity; others, because of crowded and rotated teeth which looked so unsightly that the person refused to smile; still others, because of a periodontal condition due to spaced and migrating teeth and traumatic occlusion.

After treating and watching these cases for some time after the completion of treatment, I have come to the conclusion that the age of the patient does not seem to be the important factor. Instead, the condition of the teeth and supporting structures, the desire of the patient, and his general health, are the important considerations. Thus, I feel it important that all dentists, as well as the general public, learn that *under proper conditions no person is too old to have his teeth straightened*. The decision as to whether or not to treat, however, demands much study and requires a most careful case analysis.

The malocclusion should definitely be a hindrance to the patient's physical or mental well-being. One must judge each case on its own and decide whether the treatment will be of sufficient worth to the patient to warrant his undergoing it. Some of the major conditions to be thought of in this regard are as follows:

1. Aesthetics
 - a. Protrusions causing facial disfigurement.
 - b. Crowded or rotated teeth and cross-bites.
 - c. Diastema
2. Dental Health
 - a. Pathologic migration.
 - b. Traumatic occlusion causing periodontoclasia.
3. Pain
 - a. Temperomandibular problems.
 - b. Prematurities.

Many adults having protrusions, and usually concomitant facial deformities, ask their dentists for advice and help. At times the dentists have suggested, as the only solution, removal of anterior teeth followed by replacement with a denture or bridge. Today many such

patients can and should be helped through orthodontic procedures.

Figure 1A (F.C.) shows such a case. The patient, male, age 55, presented with a double protrusion. In the first and second visits for consultation, he was told that he should let well enough alone and be content with the good natural dentition that had been serving him so well. Although the mouth had a great deal of restorative dentistry, the lower right first molar was the only tooth lost. There was considerable gingival recession of the anterior teeth, the cuspid gingiva tissue being receded 2/3 the length of the root.

The patient's chief complaint was that all his life he felt facial strain, and he had always wanted his teeth to be less protrusive. This had become such an obsession that it made him unhappy. He found it difficult to keep his lips closed without tension. Because of his age and other factors mentioned, the patient was told that it was questionable as to how much benefit orthodontic treatment would be. About three months later the patient once again presented himself for treatment. This time he indicated that he would like to take all the risks of losing certain of his teeth, which I had indicated would be a possibility, if I would take his case. He further suggested that it might be interesting for me to do the treatment from a clinical research viewpoint. With these things in mind, and feeling that this person would be much happier if the double protrusion were corrected, the case was started.

The 1st 4 bicuspid were extracted, and the posterior teeth were banded, including the cuspids. Sectional arches were used to upright the cuspids, and then intra-canine coil springs were used to place the cuspids in contact with the second bicuspid. Conventional edgewise arch therapy was used to complete the case. Eighteen months of treatment gave the results shown in Figure 1B. Final photographs show the protrusion reduction and the facial relaxation that has

taken place. This case was finished with a rubber tooth positioner in order to secure the final detailed repositioning of the teeth.

Dr. Charles Tweed's concept of placing the lower incisors back over basal bone seems to be the major reason for this type of change taking place. The removal of tooth units in the lower arch in order to have space to bring the incisor inclination distally to compensate for bad facial angles seems to permit a facial relaxation impossible to obtain in any other way.

High, blocked out canines cause many people physical and mental discomfort. These people almost always refer to the "tusks" that bother them. Fig. 2 (I.J.) shows such a condition in a very attractive girl, age 23. The upper right and left first bicuspid were removed and the canines retracted. All upper teeth were banded with nothing being done to the lower arch. Eight months of treatment gave the result shown in Fig. 2B. One can easily see the change that has taken place.

Orthodontic aid has proved of much value in the overall correction of many mouths having periodontal problems. Traumatic occlusion or severe tooth crowding may be the cause of the periodontal condition, and this must be corrected in order to effect a long range cure. In those cases having a periodontal problem, *the periodontal condition must be treated first and the acute problem relieved*. Otherwise, tooth movement would be taking place under severe pathologic conditions which would tend to destroy more bone than it would build. After the acute condition or inflammation has been brought under control, orthodontic treatment should be instituted to help correct the cause of the condition in order to attempt to prevent recurrence.

Traumatic occlusion seems to be associated with many periodontal conditions and must be corrected if the tissues are to remain in a good state of health

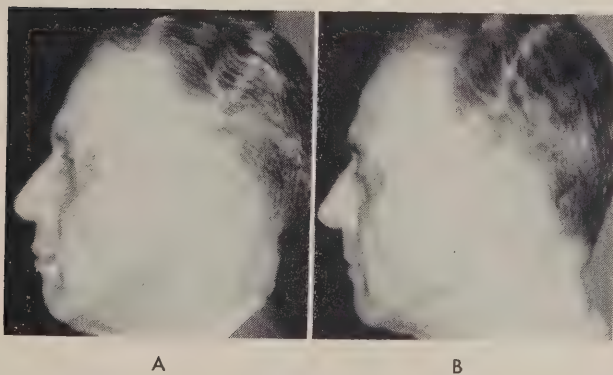
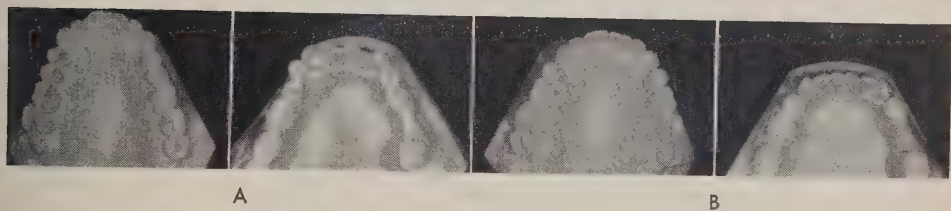
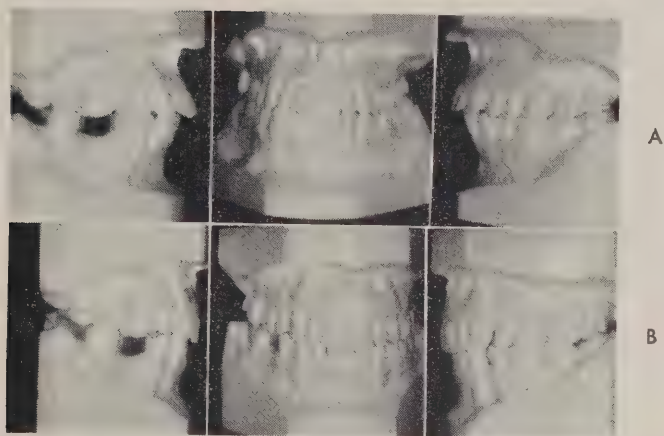
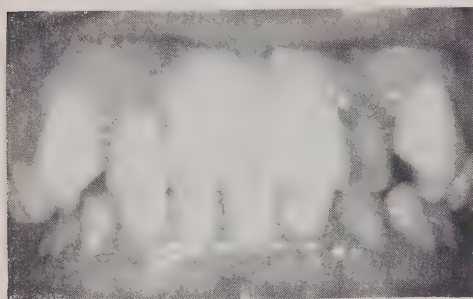
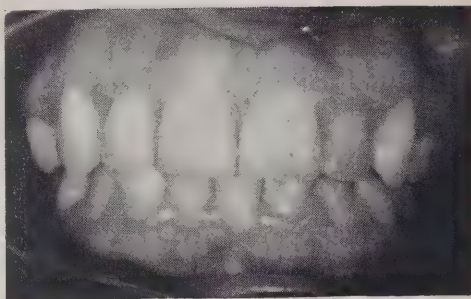


FIGURE 1.



A



B



B

FIGURE 2.

after treatment. Such a case, Fig. 3(R.P.) was referred by a periodontist who had treated the initial periodontal problem. The patient was a female, age 32. There was a deep bite with crowded lower anteriors and general irregularity of the teeth. Radiographs showed a supernumerary tooth at the midline, which was removed. Since a bicuspid had previously been lost on the lower left side, the other three first bicusps were extracted and the remaining anterior teeth were re-

tracted to close the space. (Fig. 3B) Edgewise mechanism was used and the final photographs, (Fig. 3C) show a good occlusion and good gingival tone.

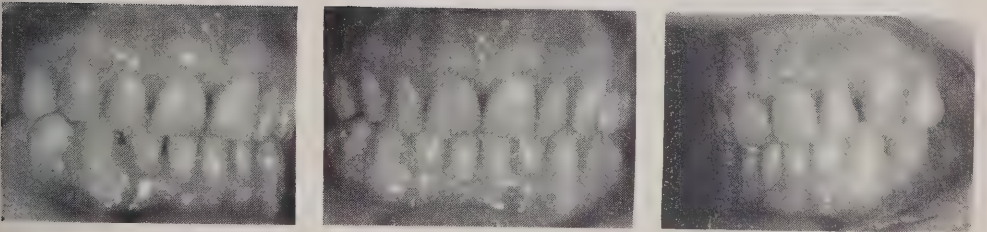
Lingual occlusion of the lower teeth or buccal occlusion of the entire upper arch may be another problem causing periodontal destruction as well as temporomandibular joint pain. Fig. 4 (A.H.) shows such a condition in a female age 21. Upper first molars and bicusps were in complete buccoversion and there



A



B



C



A



B

FIGURE 3.



FIGURE 4.

was lingual constriction of the entire lower arch. The dentition and face were further complicated by Class II division II appearance. The young lady was beginning to suffer regularly with joint pain and locking of the joint. The upper incisors were beginning to show severe lingual recession and bone destruction due to trauma. The locking bite permitted no extrusion movements.

Conventional cross elastic therapy was used to correct the molar cross bite. Then a lower lingual arch with bilateral springs was inserted. In order to free the bicuspid so that they could move, direct acrylic was added to the lower molars to hold the bite open a sufficient amount to permit the shifting of the bicuspid. At the same time, edge-wise bands were placed on the upper and the arch constricted. As soon as sufficient space for banding was available, all of the lower teeth were banded and the case completed using round and rectangular arch wires and Class II elastics. Final photographs (Fig. 4B), taken after fourteen months of treatment, show a good occlusion and an attractive girl.

It is interesting to note what it has meant to this girl in having this correction done as her entire personality has changed as well as her appearance. Her joint pain has disappeared and she is now a happy, well-adjusted person. Being able to help one such person enjoy life to the fullest should be reason enough to see to it that such conditions are corrected.

A beginning periodontal problem may cause anterior spacing, perhaps due to pathologic migration. Such spacing is frequently a source of worry and unhappiness to many adults. Often these diastemas may be closed by a simple removable appliance, having a labial wire to which tension can be adjusted. At other times complete orthodontic therapy may be indicated. Fig. 5 (E.D.) shows the most severe diastema I have treated. This patient was a female, age 38. All upper teeth were banded and six

months of treatment gave the result shown in Fig. 5B. A good functional, esthetically pleasing occlusion was obtained.

Mouth rehabilitation has become one of the major fields of dentistry, and orthodontics often plays a vital role in achieving a fine result. Frequently, bite raising may be indicated, and if so, one must consider the amount of freeway space available. A temporary plastic splint should be worn for a few weeks and adjusted to the point that the joint, and jaw movements are well accommodated. Protrusions of the anterior teeth and general alignment should be accomplished before the operative procedures begin.

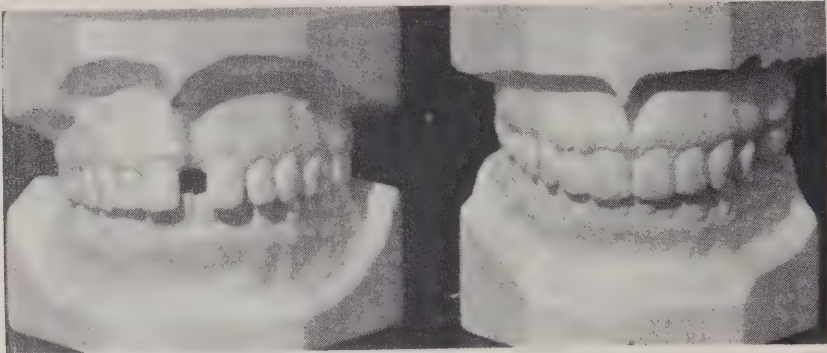
These past few cases involved changes in jaw position as well as individual teeth. Mass movement of teeth was involved including extraction of certain teeth in order to secure room for alignment and retraction of remaining teeth. These procedures require great care and should be attempted only by one well trained in orthodontics.

There are, however, many cases which can be done by the general practitioner as a part of his routine treatment and certainly by the person doing mouth rehabilitation. Some of the indications are:

1. Uprighting, for bridge abutments, teeth that have tilted mesially or distally.
2. Small amount of spacing between anterior teeth.
3. Mild cross bite of individual anterior or posterior teeth.
4. Pathologic migration of certain teeth.

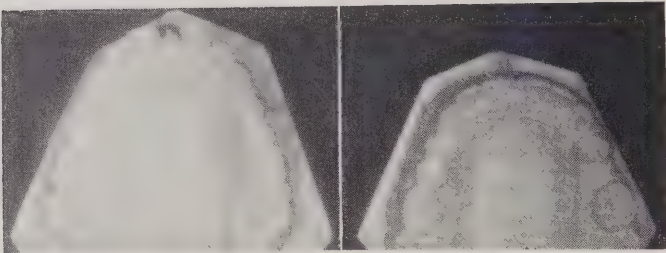
Simple or minor movement can be accomplished in several ways:

1. Rubber Bands.
2. Removable appliances.
 - a. Hawley type (Combination of acrylic and wire).
 - b. Jackson (All Metal).
 - c. Crozat (All gold removable).
 - d. All acrylic alone or in combination with other types.
3. Steel Wire ligatures.
4. Fixed lingual or labial arches.
5. Silk ligature.
6. Elastic thread ligature.



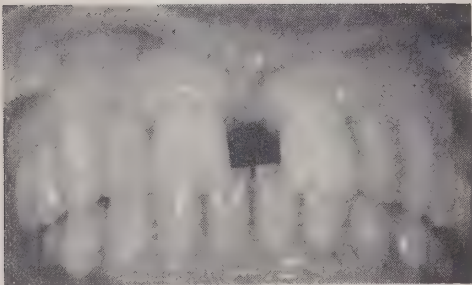
A

B

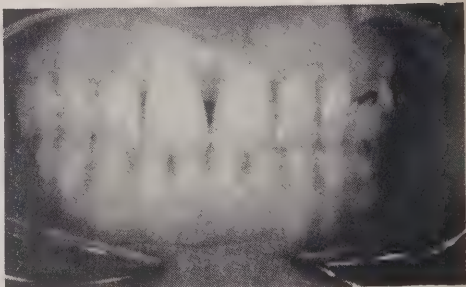


A

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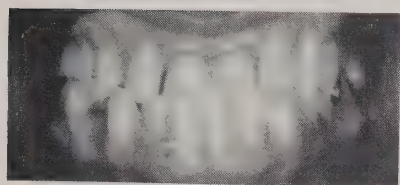


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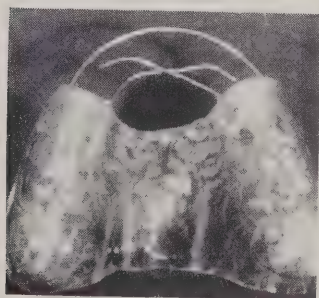
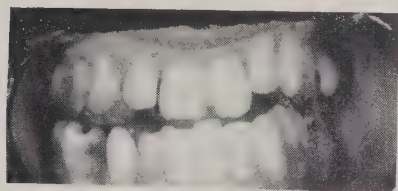


B

FIGURE 5.



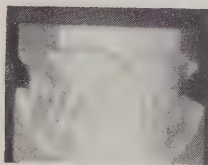
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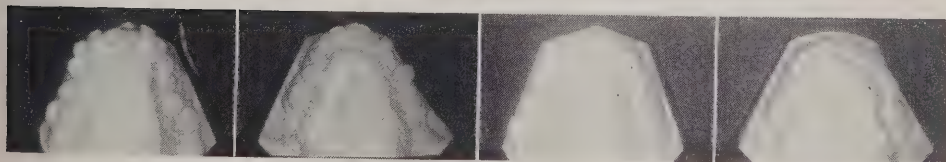
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A



C



A

C

FIGURE 6.

One of the most important factors in minor tooth movement is an accurate diagnosis. Models and x-rays must be studied, a careful case analysis made, and a plan of treatment set out. Before the decision to treat is made, the supporting tissues must be evaluated in order to determine whether they are capable of the repair process.

If a tooth has enough bony support to be retained, it has enough to warrant tooth movement.

The bite should be checked in protrusive and lateral excursions as well as in centric in order to determine if trauma is present. The force causing the migrating movement must be removed, as well as beginning pocket formation. I cannot stress too strongly that necessary periodontal treatment should be instituted before tooth movement is started.

Space must be adequate and can be secured in the following ways:

1. If teeth are bell-shaped, some stripping and polishing of the proximal surfaces can be done to secure more space.
2. Acquire space from other available places in arch.
3. Extract one or more teeth as requirements of case indicate.

In periodontal problems, the tooth having least alveolar support will move more, so this must be taken into consideration when considering anchorage needs.

It is most important that one be able to select the simple treatment case as compared to those requiring more complicated treatment. In the simple treatment category only those cases should be included which require movement of individual teeth with adequate space already available or easily obtainable. Cases requiring complete arch correction such as Class II or Class III malocclusion should rarely, if ever, be included in the simple treatment group.

The following types of cases I feel can be included in the simple treatment category:

1. Upper and lower anterior spacing or congenitally missing incisor with re-

sulting spacing. (normal molar relation)

2. Lingually locked tooth, providing space is present in arch or can be easily acquired.
3. Protrusion of one or more anterior teeth with normal relation of posterior teeth.
4. One or two malpositioned individual teeth that have migrated due to trauma and periodontoclasia.
5. Crowded lower anteriors that can be properly aligned by extraction of one tooth. (tooth size discrepancy case)
6. Slightly spaced posterior teeth because of the loss of a tooth.

Most of the above problems can be treated with simple tooth movement so let us review a few ways to secure minor movement and see the final results.

Fig. 6 (M.W.) shows a woman age 33 with a disfiguring retraction of the anterior teeth. A simple plastic bite plate as shown in Fig. 6B was used for the major portion of this correction. As the springs pushed the lingually locked incisors labially, the plastic holding the posterior teeth apart was gradually cut down until the teeth were in occlusion. Then in order to secure more perfect anterior alignment, the teeth were banded for a short time. The final photographs (Fig. 6C) show that a result has been obtained that makes for a happier person.

Upper and lower anterior protrusion with spacing can also be corrected in a simple manner.

Fig. 7 (B.C.) shows such a protrusion in a young woman, age 28. Upper and lower removable appliances were used to retract the anteriors in approximately nine months. New jacket crowns were placed on the laterals at the finish of treatment as shown in Fig. 7B. Fig. 7C shows the manner in which this simple appliance can be used to achieve this movement.

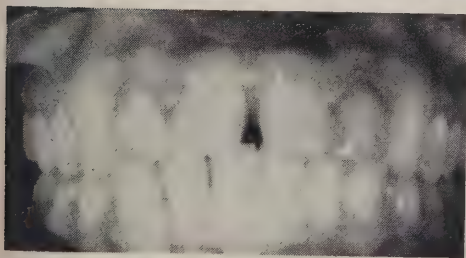
Congenitally missing laterals are also a frequent source of unhappiness to many adults. The remaining anteriors are usually widely spaced. They can be brought together with a simple remov-



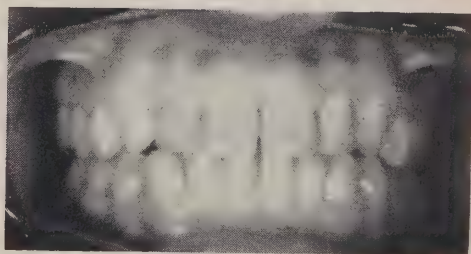
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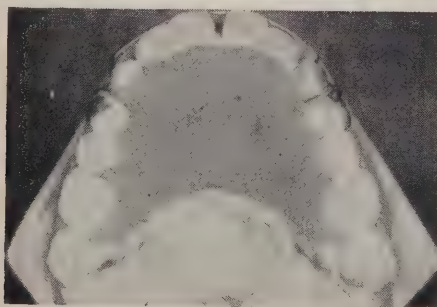
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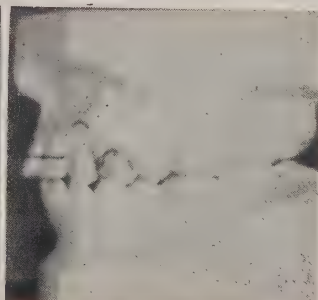
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C



C

FIGURE 7.

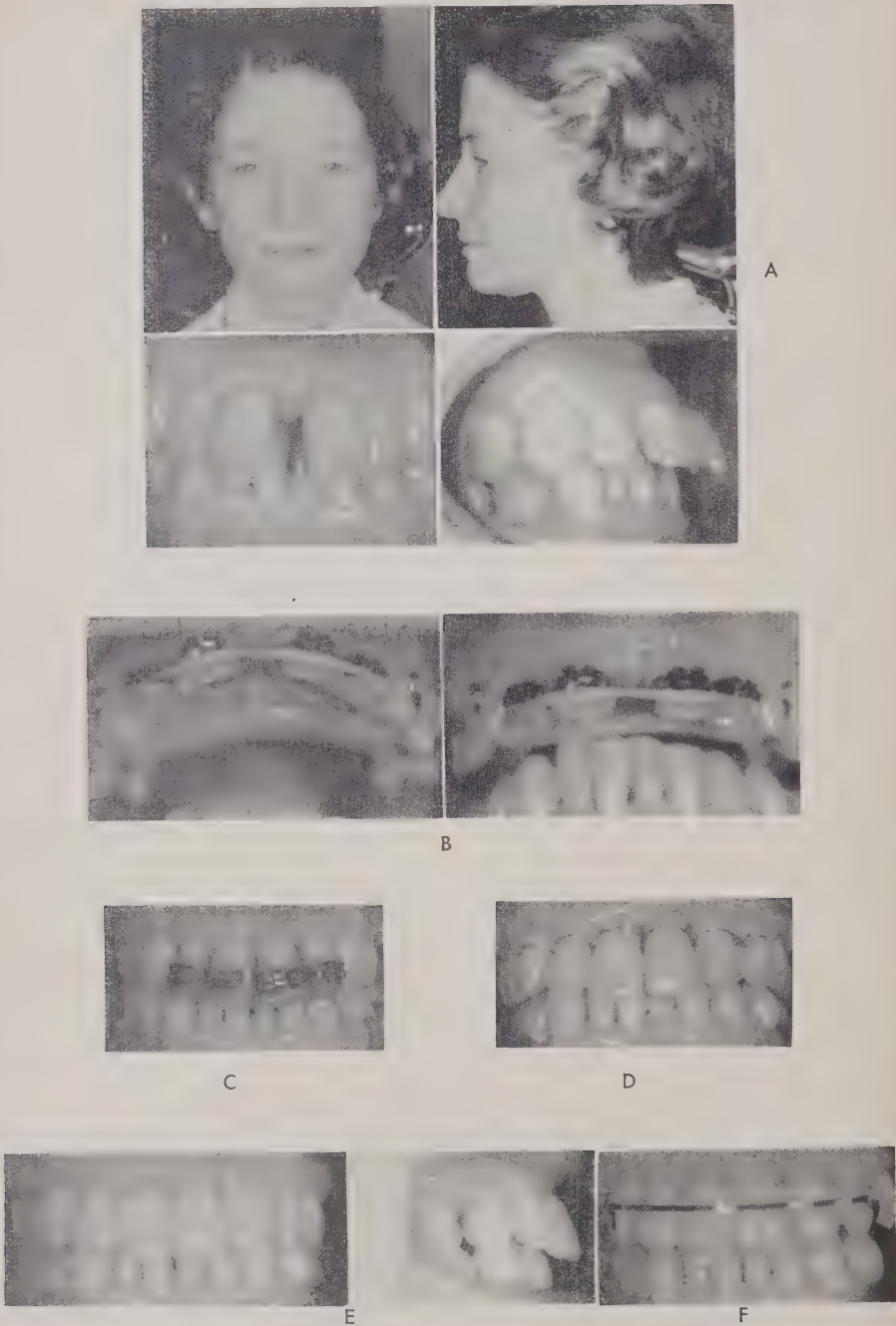


FIGURE 8.

able appliance with finger springs and proper space acquired to insert missing laterals.

In certain periodontal conditions associated with a deep bite, the upper anterior teeth sometime begin to migrate with resulting protrusion and spacing. Such a condition is shown in Fig. 8 (A.R.) This woman, aged 41, was most anxious to save her own teeth as well as to correct the unsightly anterior protrusion. Fig. 8B shows the appliance used. A light latex elastic was worn, and the anterior teeth were banded simply to hold the elastic in position on the teeth. These metal bands can be secured in several sizes and can be fitted on the teeth in a very few moments. Fig. 8C shows the condition only four months after treatment was started. Fig. 8D shows the .010 wire used to splint these teeth at the finish of treatment. This wire was re-inforced by painting fast setting tooth colour acrylic along it. In this manner, a more permanent splint was devised, Fig. 8E. Periodontal treatment was done before, during, and at the finish of tooth movement. A wire replacing the elastic was added to the appliance at the finish to act further as a splint. (Fig. 8F)

The appliances as pictured have been discussed in the literature on many occasions, and I have shown only a few uses to which they have been put. There is, however, a method of minor tooth movement that is comparatively new, and I should like to present to you a technique for this type of movement through the use of elastic thread ligature.

Fig. 9 shows a photograph of the orthodontic elastic thread ligature. It is rubber covered by nylon and can be secured in light, medium, and heavy stretch. Its advantages over other ligatures or wires are many and it handles very easily. Its force is gentle and continuous and it does not require too frequent adjustments. In conjunction with steel ligature wire or with the ligature

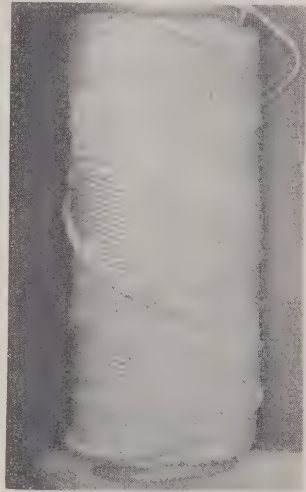


FIGURE 9.

alone, teeth may be moved either labially or lingually, mesially or distally, elongated or depressed.

Fig. 10 shows the manner in which the elastic thread ligature can be tied for closing anterior spaces. A piece of medium elastic ligature is tied around the teeth to be moved together and a piece of light thread ligature is placed between each interproximal space and tied so that the original ligature is drawn together. (Fig. 10 C&D) A dab of acrylic can be placed on certain of the teeth, if necessary, in order to act as a band or stop for the ligature and keep it from slipping gingivally.

Fig. 11 shows a method of using a piece of steel wire as a needle for the ligature in order to facilitate drawing it through a tight contact area.

The question of anchorage presents itself and one must decide which teeth it is desired to move. Then, if one or several teeth are to be moved a greater distance than others, two or more of the teeth that are remaining stable should be wired together so as to form an anchor unit. The elastic thread ligature is then tied from these units around the teeth to be moved, thus causing them to move towards the anchor unit. Fig. 12.

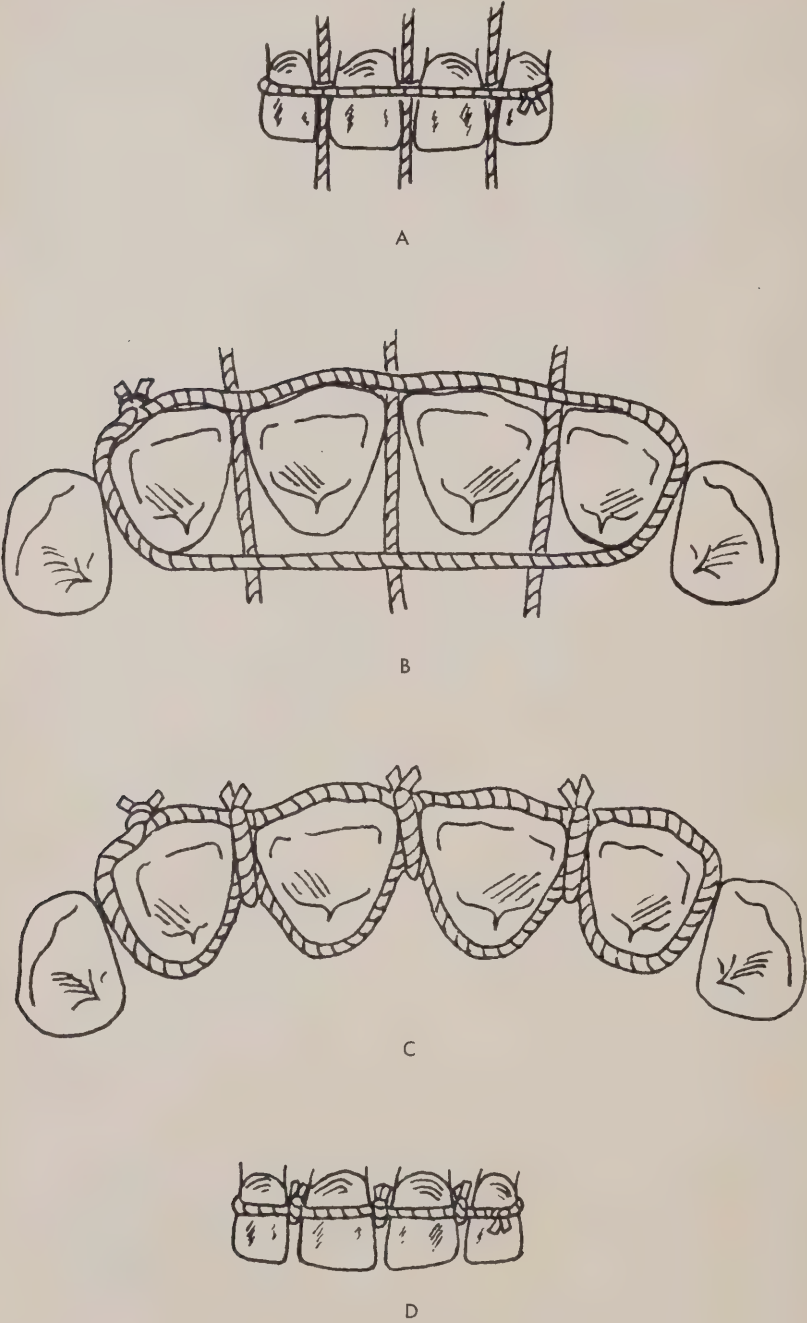


FIGURE 10.



FIGURE 11.



FIGURE 12.

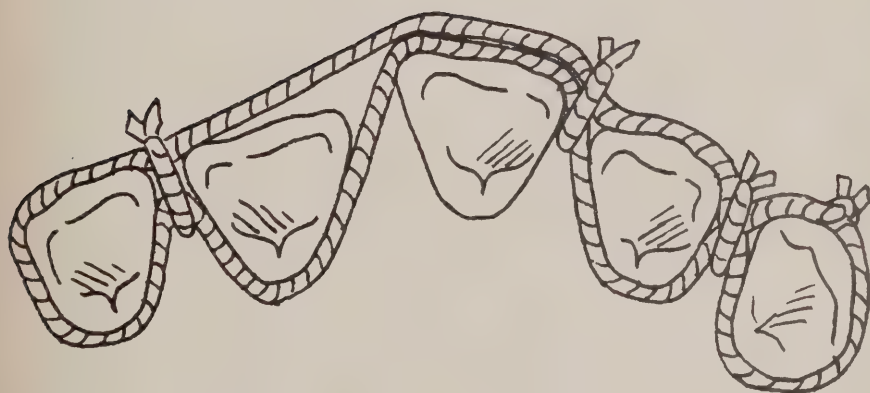


FIGURE 13.



FIGURE 14.

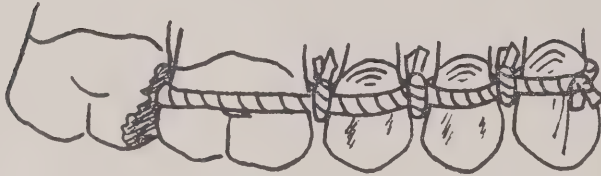


FIGURE 15.



FIGURE 16.

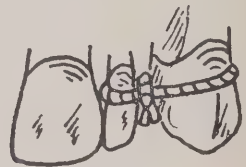


FIGURE 17.



FIGURE 18.

Fig. 13 shows an adaptation of Fig. 10 in order to move a protruding incisor lingually as well as close space. The reverse adaptation could be done for a lingually positioned tooth.

Simple movement of teeth together prior to inserting fixed bridge restorations can be easily performed with the ligature as shown in Fig. 14. This permits a much better finished restoration.

Fig. 15 shows how teeth that have drifted, due to decay or tooth loss, can be brought together in tight contact prior to making the proper restoration. Likewise can drifted molars be brought to-

gether prior to splinting by use of the heavy or medium ligature. (Fig. 16)

Proper positioning of a tooth, such as a peg shaped lateral, can be accomplished so as to be able to make a more esthetic jacket crown. (Fig. 17)

Fig. 18 shows how elongated teeth or depressed teeth can be brought into proper alignment.

Lower anteriors may frequently present a problem due to crowding causing a periodontal and an aesthetic problem. After carefully appraising the amount of space available, the dentist may decide that removing one incisor and aligning

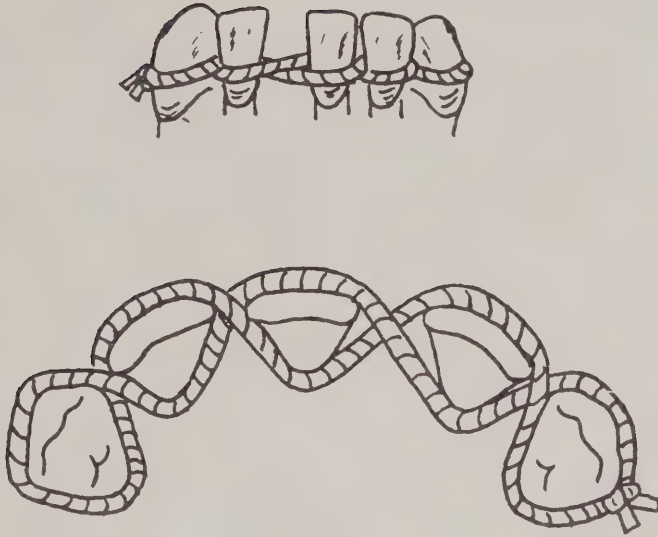
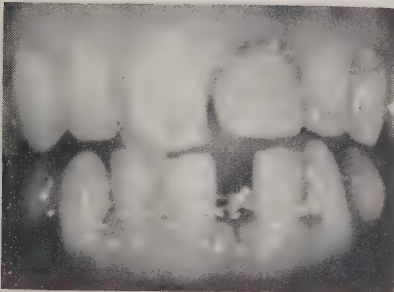


FIGURE 19.



A



B



C

FIGURE 20.

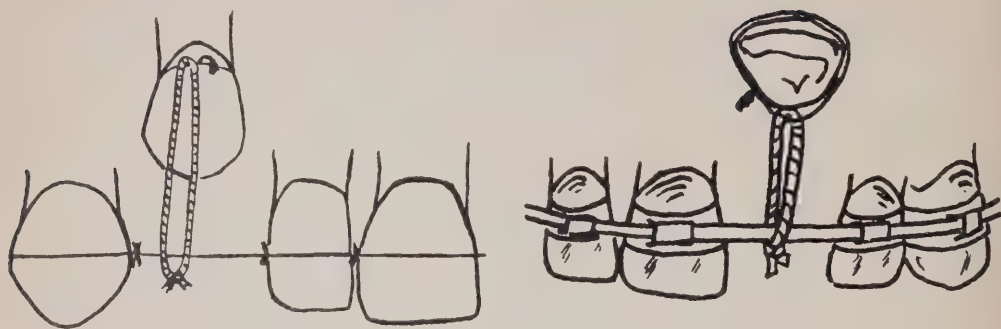


FIGURE 21.

the remaining ones will be the best solution. This space closure can be accomplished with the elastic ligature as shown in Fig. 19. Extreme care should be exerted to see to it that the teeth do not tip, but move bodily. This may be accomplished by tying the ligature as close to the gingival area as possible. Often banding of the incisors may be necessary in order to keep them upright and have the space completely closed.

Fig. 20 shows a male, age 32, in which one lower incisor was removed in order to permit realignment of the other incisors, as well as permit the upper protruded central to fall back in position. The thread ligature with only four different adjustments closed the space as shown in Fig. 20C. The incisors were then wired together and a removable retainer eventually given.

The ligature has been especially valuable as an adjunct to the bringing down of deeply embedded unerupted incisors and canines. The surgeon, at time of uncovering the unerupted tooth, can tie a stainless steel wire around the neck of the tooth and attach the elastic ligature to it. This ligature can then be tied to an archwire. (Fig. 21) This will permit continuous gentle movement over an extended period of time.

Rotations and various other movements can be accomplished, limited only by the judgment and imagination of the operator.

The techniques as presented in the literature for silk ligature and stainless steel can be adapted for the elastic thread ligature technique. The examples shown are such adaptations and no claim is being made for originality in this regard.

Occasionally simple anterior orthodontic bands having an attachment welded to their labial surfaces can be cemented to those teeth needing more bodily tooth movement or to facilitate holding the ligature in place. These can be secured, preformed, in several convenient sizes. Frequently a stainless steel ligature can be tied around each tooth and then fast setting tooth color acrylic can be applied to the labial and lingual surfaces of the wire and tooth. After hardening, this can act as a "band" attachment to hold the ligature in its proper position.

I have tried to show the more severe as well as the more simple methods of tooth movement that should be of interest to the general practitioner. If he feels himself qualified to do the major movements, all well and good, but if not he should know which conditions can be corrected. In the minor tooth movement field, I feel that the elastic thread ligature presents a better and more simple means of tooth movement than has been possible heretofore. The movement is gentle, automatic and fast and in indicated cases will enable the general

practitioner to perform a most valuable and appreciated service.

Perhaps this presentation will kindle additional interest in the field of orthodontic treatment for adults. I particularly hope it will encourage the general practitioner to include minor tooth movement as a part of his armamentarium. Thus, I feel the dental profession can

help bring more satisfaction and happiness to more people.

BIBLIOGRAPHY

1. Klingsley, Norman W.: *Oral Deformities*, New York, 1880, Appellton and Co. P. 63.
2. Pierre Fauchard *Academy Poll: Dental Survey*, 23, 1076, 1957.
3. Goldstein, Marvin C.: "Adult Orthodontics", *American Journal of Orthodontics*, P. 39, 400-424-1953.
4. Goldstein, Marvin C.: "Oral Rehabilitation for the Adult Through Orthodontics", "The Fortnightly Review of The Chicago Dental Society", 33; 11-22, 1957.

950 W. Peachtree St. N.W.

Post-Operative Management of Healing by Second Intention*

W. J. LINGHORNE, D.D.S., M.Sc.D.**

and HENRY A. THOMPSON, D.D.S., B.Sc.D., I.D.S.R.C.S. (Eng.)

INTRODUCTION

Through accident, as in dry socket, or by design, lesions of the jaws frequently heal by second intention. This is a term often used by clinicians to describe healing other than by organization of a blood clot, first intention healing. This paper reports the clinical testing of a method for the post-operative care of such cases, suggested by certain findings in animal experimentation.

EXPERIMENTAL BACKGROUND

One of us (W.J.L.) is engaged in an investigation of the processes concerned in the maintenance, and in the repair of the supporting structures of the teeth. During the course of this investigation we became interested in seeking a ma-

terial to replace a blood clot, and to supply most of its functions in the healing of certain types of experimental wounds of the jaws. As we were listing the properties such a material would require, we were struck by the similarity to the properties of periodontal pack found in our investigations of this material reported in 1949³. A study in dogs was carried out to compare the healing (1) when a certain type of wound of the jaws was filled with periodontal pack and (2) with the healing of a similar wound filled with a normal blood clot. These experimental lesions involved the bone of the jaws, remained

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** Banting and Best Dept. of Medical Research, University of Toronto.

open to the external environment, and were such that the blood clot was exposed to the fluids of the mouth. The extraction of a tooth produces such a lesion if the soft tissues are not sutured. Our experimental lesions were more complicated than a wound produced by an extraction but were essentially of this type.

This study will be reported at a later date but certain observations relevant to this paper are listed below.

(1) In our experiments as much or more bone was regenerated when the pack was used than with a blood clot.

(2) At various intervals up to 70 days the pack was removed for examination. In all cases the wound appeared healthy and granulating well under the pack.

(3) Healing appeared to be somewhat slower but a further check on the rate and type of healing will be made by histological examination at a later date.

(4) A number of animals were purposely not examined until healing was completed. In these cases no pack was present. Presumably it had been pushed out by the proliferating cells.

On the basis of our animal experimentation it was decided to investigate the use of periodontal pack in the post-operative management of clinical cases of second intention healing. Accordingly one of us (H.A.T.) undertook to test the efficacy of using periodontal pack in the post-operative management of such cases in oral surgery. The use of controls was not considered advisable or necessary as most dentists are familiar with untreated lesions of this type. The various methods of post-operative case management are also well known.

Four case histories are reported. The first three are of a type commonly encountered in practice. The fourth is more complicated.

Case History No. 1 (P.J.)

The patient was a 30 year old male who had had an aching upper right first

molar tooth removed 5 days previously, on August 15th 1957. The extraction had taken 1½ hours. Bleeding from the nose had occurred during the course of the surgery and several times afterwards. Pain had been continuous and severe. His stomach was upset, probably from the pain, and from an excess of aspirin and morphine. He was run down and in a bad state of mind. Altogether he was a very unhappy individual.

Upon examination there was swelling and tenderness up to the infra-orbital ridge on that side. The antrum did not transilluminate. The socket area was inflamed and necrotic. Bone fragments could be felt with a soft silver probe. The antral lining could be seen but did not appear to be ruptured (Fig. 1).

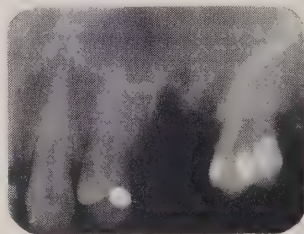


FIGURE 1

Showing necrotic tooth socket with perforation of cortical bone of antral floor.

Treatment consisted of irrigation with normal saline, none of which came out through the nose. The socket was dried by aspiration and dressed with periodontal pack*. Relief of pain was experienced within 3 minutes. On the next day the pain was still relieved and the general symptoms were improved, so the periodontal dressing was left in place.

Three days later the dressing was taken out and the loose fragments (Figure 2) removed, without anaesthetic.

* The dressing used was Periodontal Displacement Pack (Challies). In order to render this radiopaque, barium sulphate was added, 1 teaspoonful to 4 teaspoonfuls of powder. This was mixed to a smooth consistency with ¼ teaspoonful of liquid, to a thick paste. Into this, small wisps of absorbent cotton were mixed to facilitate handling. This material if protected from moisture remains plastic for several days.



FIGURE 2
Separating Bone fragments.

The socket was dressed with a pack at weekly intervals for 2 weeks (Figure 3). At this time the socket was found to be granulating well (Figure 4). Treatment was discontinued and the patient dismissed, 3 weeks after presentation.



FIGURE 3
Periodontal pack dressing in place.

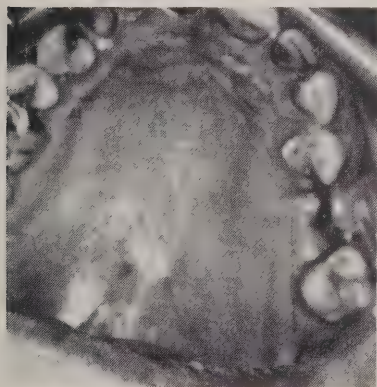


FIGURE 4
Final photograph taken at last appointment.

Case History No. 2 (J.D.)

This was one of our early cases. Her chief complaint was acute peri-coronitis in her lower right third molar tooth. X-ray examination revealed that this was disto-angularly impacted.

Penicillin was injected. Under general anaesthetic the tooth was removed, and a dressing of sterile vaseline gauze inserted. On the following day the jaw was badly swollen, very painful, and there was some trismus. The socket was irrigated, aspirated, and again dressed with gauze and a sedative post-extraction paste. Three days later the symptoms had changed little. Treatment as above was repeated and a long-lasting penicillin injected. On the next day there was some improvement but it was felt that healing was taking too long. Another injection of penicillin was administered, the socket again irrigated, aspirated, and this time periodontal pack dressing inserted in the socket.

Three days later the swelling was down to normal, trismus relieved, and there had been no pain. The dressing was removed and a large area of bare bone was open to view. A new periodontal dressing was applied. Since she was leaving on a motor trip through Western Canada the next day, she was given a list of oral surgeons along the route. Three weeks later a letter was received from Vancouver saying that she had been quite comfortable right along, and just that morning the dressing had come out. Six weeks later she presented at the office. Clinical and x-ray examination indicated a normally healing socket.

Case history No. 3 (F.L.)

The patient, a female, aged 45, was referred for the extraction of a lower first molar. Her chief complaint was occasional sharp pain over a period of a year, which had become continuous and subacute. The pre-operative x-ray (Figure 5) shows radioluscent areas around the apices of both roots. She gave a history of always having had a dry socket following an extraction.

The tooth was removed without complication and the socket curetted. The appearance was such that a dry socket was anticipated. The soft tissue was sutured and a dressing of vaseline gauze was inserted. On the next day there was some pain and on examination the bone was exposed. The socket was irrigated with normal saline, aspirated, and dressed with periodontal pack on cotton. There was immediate relief. On the following day she reported slight pain starting that morning. The treatment was repeated.

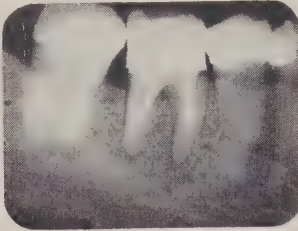


FIGURE 5

Pre-operative x-ray showing rarefying osteitis at the apices of both roots.

Normally the patient would not have been seen for a week or longer but due to her apprehension from previous experiences she preferred to see us periodically until healing appeared to be complete. The patient was dismissed 18 days post-operatively. She was comfortable and the socket appeared to be well-healed.

Case history No. 4 (E.W.)

The patient was a 45 year old female, who presented on August 8th, 1957. Her chief complaint was acute pain in and around her upper right lateral and cuspid teeth. These were abutments for an extensive and very beautiful fixed bridge (Figures 6 and 7). Endodontic treatment had just been completed on the upper right cuspid tooth. Under heavy sedation and regional nerve block, a soft tissue flap was reflected from the distal of the left cuspid to the distal of the right cuspid, and the labial bone exposed to view. Three holes in the bone were seen cor-

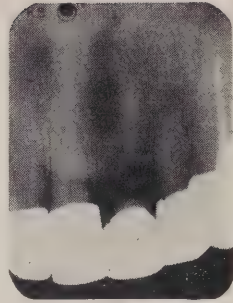


FIGURE 6

Pre-operative.

responding to the central, lateral and cuspid teeth.

The root ends of the lateral and cuspid could be seen. The root end of the cuspid was sectioned with a bone chisel and removed. A large area of soft tissue was curetted. This had eroded through the cortical bone of the anterior wall of the antrum, the lining membrane of which was exposed but not perforated. The soft tissue was found to be continuous with that around the root end of the lateral incisor.

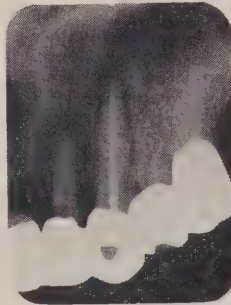


FIGURE 7

Pre-operative.

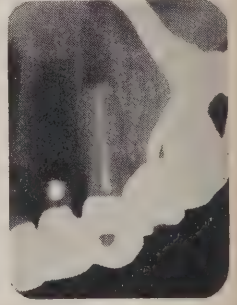


FIGURE 8

Post-operative.

It was the opinion of the endodontist that the lateral root was too short and the involvement too great to justify orthodox root canal treatment. Consequently the entire root was removed 2mm. above the amelocemental junction. The endodontist removed the coronal portion of the pulp, and filled it with silver amalgam from the root end (Figure 8). The hole in the la-

bial plate opposite the missing right central incisor was found to be fibrous tissue extending through to the palate, the result of a previous cyst operation. This was thought to be healthy and was left alone. The flap was sutured inter-dentally and a hole cut in the labial soft tissue for dressing, since it was thought the bone loss was too great and the infection too active for uncomplicated first intention healing. This was dressed with 5 inches of $\frac{1}{2}$ " plain sterile vaseline gauze. On the next day there was some swelling and pain which was controlled with ice packs. The gauze dressing was removed, the lesion irrigated with normal saline, aspirated, and a dressing of periodontal pack inserted (Figure 9).

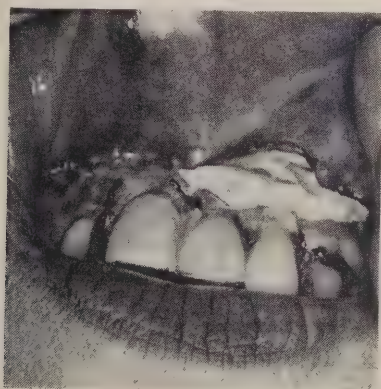


FIGURE 9
Periodontal pack dressing in place.

The patient was seen in 4 days time (Aug. 13). The swelling was down to normal. She was comfortable and consequently the dressing was left in place.

In a further 3 days time (Aug. 16) it was still quite comfortable, and the patient keen to return home to Western Canada. The dressing was removed and the lesion appeared clean and healthy. There was still a little exposed bone (Figure 10).

On August 21st, 5 days later and 2 weeks post-operatively, healing had progressed sufficiently that the patient was discharged with dressing in place.



FIGURE 10
Appearance when case was dismissed.

DISCUSSION

In our animals, the experimental wounds were filled with periodontal pack immediately. In the clinical cases, vaseline gauze was used for the first 24 hours, since this had been routine procedure in our practice for years. We hesitated to use the periodontal pack immediately, although, with the accumulating evidence of its efficacy, there would seem to be no reason why this should not be done.

Again, in most of the experimental cases in dogs only one pack was used. Some of the animals were purposely not examined again for 90 days. At this time the wound had healed and no pack was present. Presumably the proliferating cells had pushed the pack out. In other cases the pack was removed at various intervals up to 70 days. In all cases the wound appeared clean and to be granulating normally.

The clinical cases were handled somewhat differently in that the pack was removed at various intervals to ascertain if all was well. The periodontal pack was again inserted. In case number 2, however, pack remained in place until it came out itself.

Periodontal pack has been widely used following gingivectomy. The healing process has been studied by Waerhaug⁷;

Mann, Crane & Kaplan⁵; Lundquist⁴; Orban and Archer⁶; Bernier & Kaplan¹; and Fraleigh². For a review of the literature the reader is referred to a paper by Waerhaug⁷. Waerhaug and Loe⁸ made a histological study of the use of pack post-operatively in gingivectomy. They concluded that, "The gingivectomy pack is slightly irritating, but it does not prevent healing, and it apparently does not cause damage. It is walled off by a homogenous necrotic membrane of varying thickness. The antiseptics of the pack may penetrate this membrane and prevent or retard bacterial growth. The chemical compounds, on the other hand may be so diluted that they cause little irritation to the soft tissue". In vivo and in vitro studies on the therapeutic properties of periodontal pack, particularly the bacteriostatic properties, were reported by Linghorne and O'Connell³. These studies indicate that diffusion of the bacteriostatic agent from the pack into the surrounding media continues for a far longer time than is required for the management of a case of second intention healing. This supports the findings mentioned previously that up to 70 days in our dogs the wound appeared clean and granulating well under the pack.

The experimental data suggest the possibility that the use of one dressing of periodontal pack could be adequate post-operative care for many cases of second intention healing. Also, there is a distinct possibility that the case management outlined may have advantages over

first intention healing in certain cases. Whether or not these possibilities will be borne out clinically must await further experience with this method.

SUMMARY

A method is presented for the management of post-operative lesions of the jaws where either through accident or design healing occurs by second intention. Undesirable sequealae are reduced, pain is well controlled, the number of visits for post-operative care reduced, and rapid healing is achieved.

ACKNOWLEDGEMENTS

The authors express their thanks to Dr. C. B. Best for his helpful suggestions during the course of this investigation; and to Eva Gungl for her help in the preparation of the manuscript.

REFERENCES

1. Bernier, J. L., and Kaplan, H.: Repair of Gingival Tissue After Surgical Intervention, *J. Am. Dent. A.* 35: 697, 1947.
2. Fraleigh, C. M.: An evaluation of Topical Terramycin in Postgingivectomy Pack, *J. Periodont.* 27: 201, 1956.
3. Linghorne, W. J. and O'Connell, D. C.: The Therapeutic Properties of Periodontal Cement Packs, *J. Canad. D. A.* 15: 199, 1949.
4. Lundquist, G. R.: The Zero Crevice in the Management of Periodontal Involvements, *J. Am. Dent. A.* 27: 837, 1940.
5. Mann, J. B., Crane, A. B. and Kaplan, H.: Pyorrhea Alveolaris: Histopathology and Results of Radical Surgical Treatment, *Dental Cosmos* 76: 432, 1934.
6. Orban, B., and Archer, E. A., Dynamics of Wound Healing Following Elimination of Gingival Pockets, *Am. J. Orthodontics & Oral Surg.* 31: 40, 1945.
7. Waerhaug, J.: Depth of Incision in Gingivectomy, *Oral Surg., Oral Med., & Oral Path.* 8: 707, 1955.
8. Waerhaug, J. & Loe, H.: Tissue Reaction to Gingivectomy Pack *Oral Surg., Oral Med. and Oral Path.* 10: 923, 1957.

86 Bloor St. W.

Previous studies have demonstrated that of the three types of ammoniated dentifrices clinically investigated, only the high-urea formula has shown a consistent result in caries reduction.

In a further study on 140 sixth grade "caries free" school children over a 14 months test period, the high-urea dentifrices reduced caries activity about 28 per cent, a result in keeping with the findings of other investigators.

Median Anterior Maxillary Cysts*

GEORGE A. MORGAN, D.D.S., *Toronto, Ontario.*

I am indeed honoured on behalf of the Canadian dentists in general and the Department of Radiology, Faculty of Dentistry, University of Toronto, in particular, to be asked to participate in this, the 12th International Dental Congress. We should like to discuss in brief detail, the maxillary anterior median line cyst, — some of its diagnostic problems and surgical treatment.

There are apparently times when we can learn more from the dead than from the living. Such an instance occurred in 1908 when Meyer of Stanford University observed what seemed to be a supernumerary paranasal sinus in the mid-line of a freshly sectioned cadaver. The bony walls of the cavity were smooth, there was no evidence of dental disease among the central incisors and the periodontal membranes appeared to be normal. Meyer, therefore, excluded the possibility of this cavity being a dental radicular cyst and considered it to be an accessory paranasal sinus.

Meyer, in his second report after examining 600 cadavers, reported the incidence to be 1 in 66. Stafne stated that the results of radiographic evidence of 10,000 patients observed at the Mayo Clinic showed the incidence to be not less than 1 in every 100.

Rushton of Guy's, Wild of Switzerland, Blum of New York, Gottlieb of Vienna, Stafne, Austin and Gardner of the Mayo Clinic, Mavrogordato of Greece, Kivimaki of Finland, Norberg of Sweden, Worth of Canada, and undoubtedly many, many others, have all reported cases similar in radiographic and pathologic appearance to those originally observed by Meyer, Congdon, and Schroff.

A brief review of the anatomy of the

incisor canal will make it easier to describe the location of these median anterior maxillary cysts. Each foramen opens into a canal that continues downwards, forwards, and medially to enter a broad groove which, when the two maxillae are articulated, forms the oval incisive foramen. These two canals open into the incisive foramen like the arms of a Y and are called the foramina of Stenson. In front and back of these the smaller foramina of Scarpa also enter the incisive foramen. Figure 1.

The mucous membrane of the hard palate where it covers the incisive foramen presents an oval shaped, smooth swelling called the papilla palatina.

These cysts are supposedly derived from epithelial rests of Mallassay which remain in the interincisive region. These remnants of palatine epithelium may be incited to growth by any form of irritation, be it chemical, bacterial, or traumatic.

Microscopic examination of a pathological section of the wall of a median anterior maxillary cyst will reveal that its lining membrane will be most commonly squamous or transitional cell epithelium.

In many sectioned cysts, areas of ciliated epithelium are reported. This demonstrates that, in part at least, these cysts belong to nasal structure. Such a case is illustrated in Figure 2.

There are no clinical findings unless the cyst has attained sufficient size to protrude from the bone into the soft tissues. In such an event swelling will occur behind the incisor teeth at the papilla palatina. Pain symptoms may also be present, the usual path of the pain being up along the side of the nose.

Differential diagnosis of the various conditions that can occur in the anterior

* A co-report from the Department of Radiology, Faculty of Dentistry, University of Toronto. Presented at the 12th International Dental Congress, Rome, Italy, September 7 - 14, 1957.

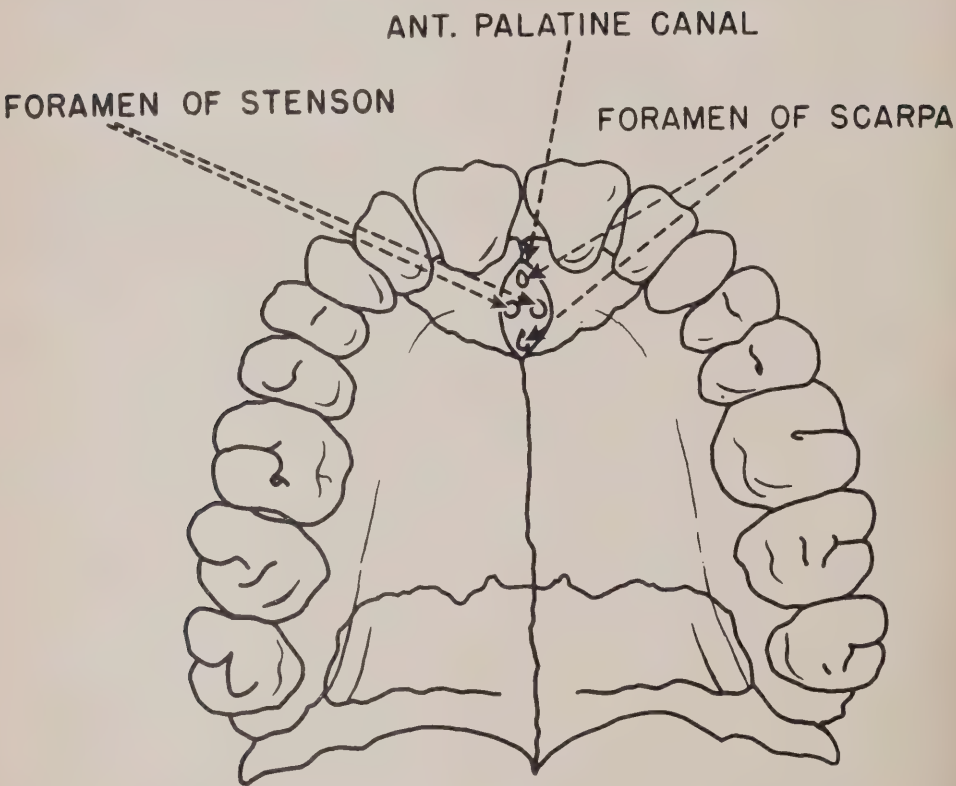


FIGURE 1. Median Maxillary Line Cyst Diagrammatic Anatomical Location.

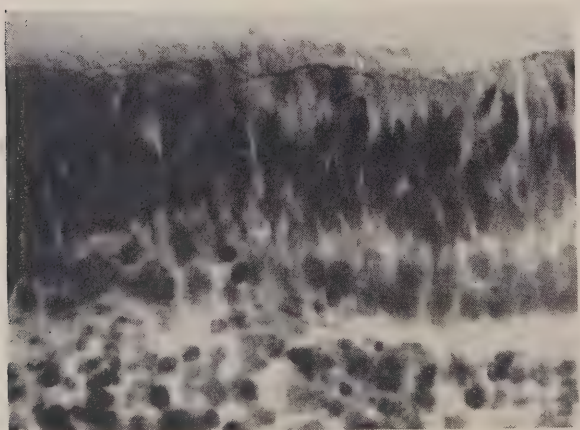


FIGURE 2. Photomicro illustrating ciliated epithelium.

portion of the maxilla is important for pathologic areas of bone radiolucency are frequently seen in this region. The problem is to distinguish between the incisive foramen, a median anterior maxillary cyst, and a pathologic area about the apex of one or more of the anterior teeth. Occasionally one observes in a periapical radiograph of the anterior maxillary region the superimposition of two or even all three of the entities concerned with differential diagnosis in this area: namely, the incisive foramen, a median anterior maxillary cyst, and an area of radiolucency about one or more anterior teeth. Figure 3 illustrates what appears to be a pathological radiolucent area at the apex of the right central incisor: — a radiolucent area representing the anterior palatine foramen, and a radiolucent area illustrating a mid-line cyst.

As illustrated in Figure 4: Median line



FIGURE 3.

Illustrates a pathological radiolucent area at the apex of the right central incisor: a radiolucent area representing the anterior palatine foramen, and a radiolucent area illustrating a mid-line cyst.



FIGURE 4.

Mid-line cyst bisected by palatine suture.

maxillary cysts will generally be observed to be spherical and divided by the palatine suture. This will be found to be in strict contrast to other cysts or pathologic areas about the central and lateral incisors which have a tendency to be observed on either one side or the other of the nasal spine.

Figure 5: Is a radiograph of a radicular cyst presenting a typical example of this tendency for it is almost entirely on the right side of the median suture. Cysts are more easily recognized in the edentulous jaw and may present a protuberance on the alveolar ridge and cause localized or referred pain in the anterior region of the maxilla due to nerve pressure internally from the cyst and externally from the denture.

Figure 6 illustrates: a periapical radiograph disclosing a cyst where a mistake in differential diagnosis caused the loss of the anterior teeth. It is interesting to note here how well the median line suture divides the cyst into equal parts.

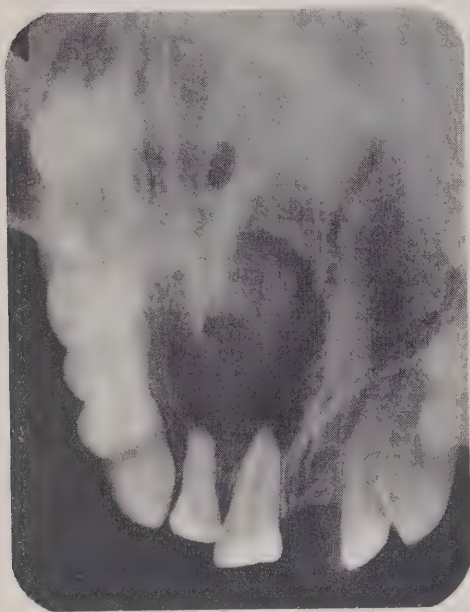


FIGURE 5.
Radicular cyst on right side of palatine suture.

The great majority of these cysts are limited in size and those that remain confined to the canal are considered to be without clinical significance. Frequently, however, one of these cysts will become infected, enlarge, break down the walls of the anterior palatine fossae and invade the bony structure of the palate. Such a case is illustrated in Figure 7.

With few exceptions these cysts have no connections with the anterior teeth and since the method of removal is via the palate, it is seldom necessary to remove the teeth. A gingival-palatine incision is carried from cuspid to cuspid, or if necessary, to the first bicuspid in the incision of choice. The distance to which the flap extends posteriorly is governed, of course, by the size of the cyst to be removed. If a median anterior maxillary cyst occurs in an edentulous mouth, the incision is made along the ridge.

The flap is retracted, ignoring completely the nerve, which is cut off flush with the bone of the hard palate. A



FIGURE 6.
Anterior teeth removed due to mistake in differential diagnosis.

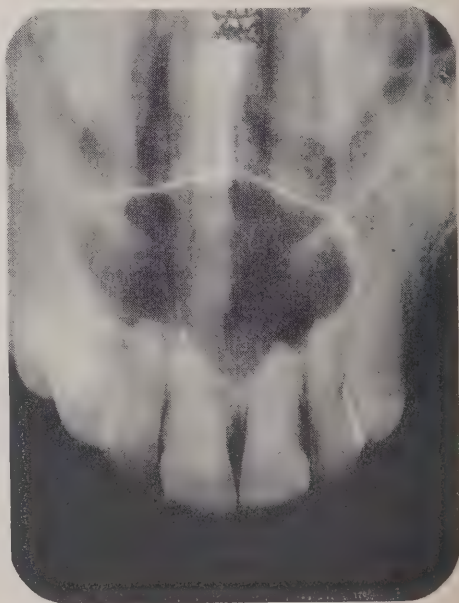


FIGURE 7.
Infected mid-line cyst.

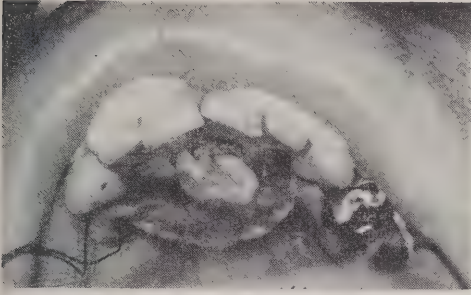


FIGURE 8.
Retracted flap illustrating cyst to be removed.

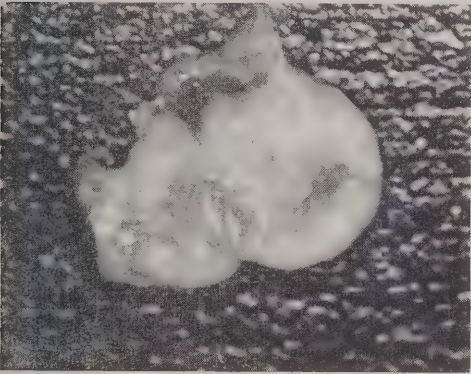


FIGURE 9.
Photograph of cyst removed.

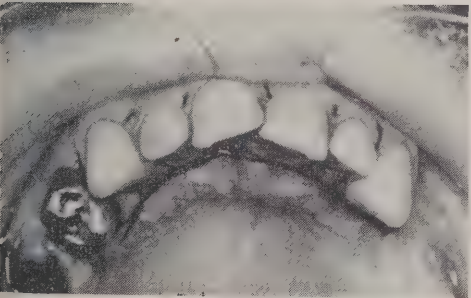


FIGURE 10.
Sutured flap.

sufficient amount of bone is removed to afford access for the complete enucleation of the cyst. In this regard it should be remembered that, if the cyst is punctured and deflated before removal, it can be removed through a smaller

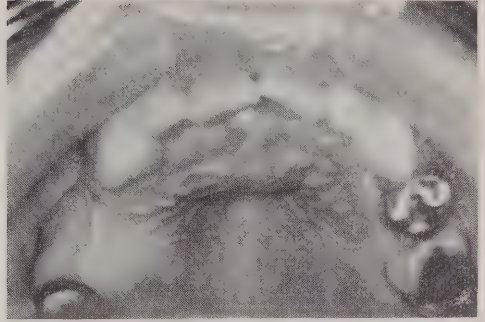


FIGURE 11.
Photograph illustrating degree of swelling in palate (pre-operative).

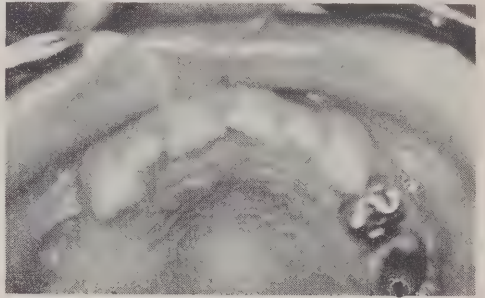


FIGURE 12.
Photograph illustrating result without loss of anterior tooth structure (post-operative).

opening, thus saving important palatal bone, Figure 8.

The flap is then returned to place and sutured through the interproximal spaces — as illustrated in Figure 9. This type of flap does not interfere with blood circulation and when retracted, gives excellent exposure of the operative field. When returned it has sufficient size and strength to adequately support the post-operative blood clot. There will be no leakage; healing will be rapid and painless. Post-operative photograph of cyst removed is illustrated in Figure 10.

Pre-operative photograph illustrates degree of swelling in palate, Figure 11. Post-operative photograph illustrates result — without loss of anterior tooth structure, Figure 12.

170 St. George St.

Allergic Reaction to Denture Base Material

JAMES SIM, D.D.S., St. Catharines, Ontario

A Case History

An edentulous white female patient of approximately 35 years of age presented on January 9th, 1957 for consultation.

CHIEF COMPLAINT

On or about November 15th, 1956, the patient had the complete upper denture she was wearing rebased. It was ascertained from the patient that the material used was a direct (quick curing) acrylic resin.

Several days thereafter, she developed a painful stomatitis, manifested by large, eroded, ulcerated areas with yellowish borders. Associated with this was a swelling of both ankles, more pronounced in the left than in the right.

About the time the stomatitis became unbearable, the treatment rendered seeming to be of no avail, the patient presented to her physician. The patient states that a tentative diagnosis of "trench mouth" was made. (The unconfirmed diagnosis of necrotic gingivitis is questioned on the basis that the mouth is edentulous; but secondary infection of the ulcerated areas is not discounted.) Penicillin was administered to help control the infection that had developed. At this time the patient complained of some dizziness, but the history is rather vague.

TREATMENT

The patient was referred to this office for consultation by her physician, and it was stated that considerable improvement had taken place in the mouth. The patient was not wearing her dentures.

On January 9th, 1957, this history having been obtained, the following items were prescribed:

1. Milk of Magnesia as a mouth wash, to help heal the remaining ulcerated areas.
2. Compound tincture of benzoin to be painted on the affected areas to promote healing and help relieve pain.
3. A vitamin supplement was prescribed (Multicebrin—1 capsule daily) as the diet had been most inadequate since the onset of the disturbance.
4. The patient was instructed to maintain a high protein, soft nourishing diet (egg nogs, milk shakes, cream soups etc.,) in order to help her regain her strength.

After several days only one eroded area remained, and on radiographic examination a root tip was found to be retained at or about the base of the abnormally large right maxillary sinus.

The patient was forewarned of the danger of exposing the floor of the sinus, and the surgical procedure was outlined. On January 22nd, 1957, under local anaesthesia (4 ccs — Xylocaine 2% — 1: 100,000 epinephrine) an incision was made along the crest of the alveolar ridge, and a flap was raised. The root tip was readily revealed, but during the surgical procedure an opening was made in the floor of the maxillary sinus. Primary closure was effected using three interrupted sutures, and the following drugs were prescribed:

1. Oral penicillin—1 tablet of 500,000 international units every 8 hours until 12 tablets have been taken.
2. Nose drops (Clopane) to be applied as directed every three hours to the nostril on the affected side.
3. A.P.C. with $\frac{1}{4}$ gr. codein every four hours if found necessary for relief of pain.

The recovery was uneventful and the sutures were removed nine days later.

On February 18th, 1957, preparation was made to provide the patient with artificial acrylic dentures, which were inserted on March 6th, 1957.

The patient experienced every degree of reasonable comfort, the maxillary denture requiring no post-insertion care, the mandibular denture requiring several adjustments, involving trimming and repolishing of the denture base.

Late in April, 1957 (about 7 weeks later) some ulceration appeared in the floor of the mouth which was not characteristic of denture soreness. These areas did not clear up but became worse. Then for the first time a small area developed on the palate just about the mid-line and about 5 mms from the crest of the anterior portion of the alveolar ridge. The maxillary denture was relieved in this area, repolished and subsequently the area increased in size and became more painful.

The patient was instructed to remove the dentures and not wear them, and an anti-histamine (Ambodryl - 25 mgs. twice a day) was prescribed, until the inflammation subsided.

She was then instructed to replace her dentures on a trial basis. Within 24 hours she complained that her "mouth was on fire", and was asked to remove her dentures until appropriate tests could be conducted.

Sample plaques of the acrylic used, of a chrome cobalt alloy which might be used as a denture base, and the history were sent with the patient to a specialist in allergic diseases.

The report,¹ received from the allergist, is as follows:

"The patient was investigated for the cause of her stomatitis after contact with an acrylic denture.

"A small plaque of acrylic resin was applied in the mouth, and held against the buccal membrane by the tongue. In fifteen minutes the patient complained of a burning sensation, and on removal of the plaque an acutely congested area of mem-

brane was seen where the acrylic material had been in contact with the membrane and the tongue. A similar test performed with a plaque of chrome cobalt alloy did not produce any sign of incompatibility. Another plaque of acrylic resin was strapped to her arm and allowed to remain in contact, for no more than two days, or until she felt it had begun to produce trouble. She reported that after forty-eight hours, irritation had begun and she removed it because of discomfort. A similar plaque of chrome cobalt alloy was applied to the other arm and no such reaction was noticed. In addition, a small amount of vulcanite powder was applied in a similar way and this was also entirely non-reactive.

"I think there is no doubt that the acrylic resin is responsible for the stomatitis which has prevented her from wearing the dentures."

The patient then returned to this office, and impressions were obtained within the maxillary and mandibular acrylic dentures, using the technique employed in rebasing. The bite was carefully checked, and the dentures were sent to the laboratory where vulcanite denture bases were substituted for the existing acrylic.

The vulcanite dentures were then inserted on June 4th, 1957. The mandibular denture required two or three post-insertion adjustments, and since June, 1957 the patient has been asymptomatic.

CONCLUSIONS

1. Although uncommon, allergic reactions to acrylic denture base material require thorough investigation.

2. It is reasonably safe to assume that the patient became sensitive to acrylic as a result of the use of the more volatile and irritating quick curing acrylic.

3. It is possible that a processed acrylic rebase initially could have prevented much needless pain and expense for this patient.

4. When rebasing dentures the use of quick curing denture acrylic in the mouth

is advised against on the basis of this, and one other similar personal experience, unless the patient demands an immediate service and is warned of the danger of sensitivity to acrylic that may develop.

5. Investigations now being undertaken provide hope that a denture acrylic may be developed in the future, in which it will be possible to electroplate the individual particles of acrylic, overcoming the contact between acrylic and tissue (even if the denture be trimmed after processing) and thereby eliminate the possibility of irritation.

ADDENDUM

At the suggestion of the editor a further test was made to that described in the allergists's report above. The patient was provided with two plaques, one of clear acrylic, one containing pigment. These were strapped on the left arm and the previous instructions repeated. The patient called the office and stated that

the plaque containing pigment had begun to be bothersome in about 24 hours and she had to remove it to relieve the irritation. The clear acrylic plaque caused no reaction and was removed in 48 hours. In addition a plaque containing pink acrylic was placed in the mouth whilst she was in office and held by the tongue against the buccal mucous membrane for fifteen minutes. It proved irritating and the area appeared slightly inflamed. A similar test was conducted immediately after, using a plaque of clear acrylic against the opposite buccal membrane. No reaction was observed on removal and the patient stated that there was no discomfort or irritation.

The conclusion can probably be made that the clear acrylic would be safe to use as denture base material in her mouth.

BIBLIOGRAPHY

I. R. F. Hughes, B.A., M.D., F.A.C.A., Personal Communication.

140 Church St.

The Dilemma of Analysis and Synthesis—We have inherited from our forefathers the keen longing for unified, all-embracing knowledge. The very name given to the highest institutions of learning reminds us, that from antiquity and throughout many centuries the universal aspect has been the only one to be given full credit. But the spread both in width and depth, of the multifarious branches of knowledge during the last hundred years has confronted us with a queer dilemma. We feel clearly that we are only now beginning to acquire reliable material for welding together the sum total of all that is known into a whole; but, on the other hand, it has become next to impossible for a single mind fully to command more than a small specialized portion of it.

I can see no other escape from this dilemma (lest our true aim be lost forever) than that some of us should venture to embark on a synthesis of facts and theories, albeit with second-hand and incomplete knowledge of some of them—and at the risk of making fools of ourselves. Schrodinger (1945).

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October 26th - 29th, 1958



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EDITORIAL

The Need For Dental Service Plans

The dental profession has taken insufficient initiative in the development of plans for dental services. The profession in one province administers a welfare plan and in another operates a non-profit post-payment plan. By and large other existing services are conducted by governmental agencies or departments. It is our contention that the more actual control of any health plan left to the responsibility of the respective professions involved, the better the services will be for the public. Medicine has provided ample proof of this contention but, to date, pertinent evidence, in respect to dentistry's capabilities, is all too scanty. Alberta's welfare plan and Saskatchewan's post-payment scheme provide, essentially, the only experience Canadian dentistry has to offer. The further development, therefore, of dental service plans throughout the country is mandatory if dentistry is to negotiate effectively with any government which proposes to introduce a health insurance plan which includes dental care.

As an initial step further consideration should be given to the extension of the post-payment plan program as it exists in Saskatchewan. A foundation has been well and truly laid and it now only remains to build a program the influence and contribution of which will extend from coast to coast.

The Saskatchewan plan is the only post-payment scheme which adheres to the principles adopted by the Canadian

Dental Association in 1954. Essentially it is required that the plan be non-profit in character and that it be operated under the aegis of the profession. The primary purpose of the plan is to provide a desirable dental health service, not the organization of a collection agency.

The plan has four basic purposes:

- 1) To provide dental care for patients who are unable to pay cash for treatment.
- 2) To arrange credit on an equitable basis in a manner suitable to the patient's income.
- 3) To present to the public an ethical plan whereby families whose income is already depleted by steadily mounting costs can avail themselves of the best in dental care without financial embarrassment.
- 4) To keep the cost of dental care to a minimum by operating a non-profit organization within the framework of the provincial associations, thus eliminating some of the high charges required by most finance plans.

From the standpoint of the profession however, the more favourable collection experience of such a plan cannot be overlooked. Recent authoritative figures indicate that in Canada last year some \$1,806,000,000 of goods and services involved instalment financing. Some \$3,234,000,000 was dealt with by way of charge accounts. It, therefore, appears to be obvious that if dentists expect some of their statements to be given comparable priority to the automobile, the electric dryer, or the outboard, some

consideration must be given to methods whereby patients are able to finance their accounts. Whether desirable or not, credit buying is an established fact in contemporary life.

A number of post-payment plans have been operating with some success in the United States. There the banks are legally entitled to administer the financial arrangements, which function is prohibited in Canada by the Canadian Bank Act. The plans in the United States may accept only accounts approved by the bank, which defeats the primary purpose of the plan and leaves the somewhat less desirable risks to be taken care of by the profession in the traditional manner. Furthermore, when the note is deposited with the bank, the bank assumes its disposition and the patient-dentist relationship is thereby eliminated.

Private organizations have seen significant profits to be earned through the financing of dental services. If the dental profession is sincerely anxious to provide a service to the public and thereby enhance the relationship between the public and the profession, it will disregard the blandishments and operate its own plans in the interest of the public.

One organization, at least, has, within the last several months, made what might appear on cursory appraisal, relatively attractive proposals to the profession in respect to the financing of patients' accounts. The firm proposes that a patient would sign an agreement with the dentist and the dentist in turn would forward the agreement *for approval*. If, apparently, the risk is considered reasonable, the dentist is mailed a cheque for sixty per cent of the estimated fee. An additional thirty per cent is remitted to the dentist upon maturity and final payment of all such agreements. The balance of ten per cent is retained by the company presumably as a charge for the service. Monthly payments by the patient may be spread out to suit his budget and the carrying charge to the patient is one per cent per month.

Let us look at a possible example of

this in practice, setting arbitrary dates and other conditions. The patient signs a note for \$200.00 on the first of the month, with monthly payments of \$10.00 payable the first of each following month.

At the end of the month the firm remits to the dentist \$120.00 but on the following day receives the patient's first \$10.00 payment. The actual sum financed is therefore \$110.00. Extending this to the thirteenth month, at which time the firm has its investment returned, we find it has earned an average of 2.76% *per month* on the investment.

From that point on interest is being received with no investment and in addition there is a steadily increasing amount of the dentist's money which can be re-invested in purchasing other dental notes.

Using the assumption that the dentist's money which the firm reinvests will earn the same amount of money as its own (2.76% *per month*), the interest paid by the patient, and the \$20.00 deduction from the dentist, we find the firm's money is earning 7.4% *per month* or 88.8% *per annum*.

It, of course, costs something to operate. Let us then make the most liberal assumption that the ten per cent deducted from the dentist will pay the cost of handling that specific account. This still leaves the firm with a 4.39% *per month* or 52.68% *per year* earning on its investment dollar. This return is not altogether unfavourable.

The exactness of these figures could be questioned because of many contingencies but nevertheless we believe they are fair. No mention has been made of the fact that the interest earned could also be re-invested and also the example is probably extreme because if the payments were set at \$20.00 *per month*, the debt would be cleared more quickly and the ten per cent deduction therefore made earlier. While the interest is on a monthly basis the deduction is constant and would more than offset the loss of interest from the patient. Such a firm would probably be safe in assuming that

its investment would earn at least fifty per cent per annum.

Now we have no great antipathy toward finance companies. We just do not believe they have a place within the professional relationship which exists between the dentist and his patient. Through his own professional organization this relationship between dentist and patient can remain inviolate.

With the Saskatchewan plan the dentist has complete control over the acceptance of patients into the plan. There is no second or third party deciding upon the credit rating of the patient, leaving the profession with the responsibility of caring for the border-line or poor-risk patients in an individual manner. This is a plan which permits any patient to seek attention in the office of the dentist of his choice and the dentist maintains his traditional privilege of accepting or rejecting the person as a patient. If the

profession is to remain autonomous in respect to its relationship with the public, this principle is vital.

That the Saskatchewan plan has been successful is beyond question. The *Saskatoon Star-Phoenix* expressing a typical observation in welcoming the plan, commented editorially as follows: "The plan's chief value, as the dentists themselves hope, should be to stop people putting off needed treatment because they lack the money to pay for it immediately. This is a worthy aim. We commend the Saskatchewan Dental Services for introducing the first plan of this kind in Canada."

Likewise, we commend the Saskatchewan Dental Services and couple this with the hope that other provincial organizations will join with this province in providing this much-needed program in their respective areas.

BOOK REVIEW

Clinical Applications of Hypnosis in Dentistry. Prepared by: S. Irwin Shaw, D.M.D., M.Ed. Published by: W. B. Saunders Co. Pages: 173. Price: \$4.50.

This is a practical book which also includes some of the psychological background of everyday living, possibly over emphasizing the Freudian School of Psychology but fortunately including some Adlerian theory as well.

Dentists using hypnodontics should have a thorough understanding of the psychological background of hypnosis and the writer not only emphasizes this point but also another very important one: hypnosis should only be used by a dentist for dental problems.

The author has written a practical manual so that the dentist can apply many different techniques which have proven to be useful in the dental office. Dr. Shaw is well trained in the field of psychology and hypnodontics and is one of the pioneers in this field.

The beginner will find in this book a working outline for routine procedures in using hypnosis. The material is arranged in a very concise manner which makes it easy for reference. The inclusion of a section on terminology is an excellent idea, but the definition of psychosomatic dentistry is limited in scope, as hypnodontics is only one aspect of psychosomatic dentistry.

The case histories are a worthwhile inclusion as the beginner will get a better understanding of solving actual behaviour problems. The chapter "An Approach Without Hypnosis" demonstrates the importance of the dentist realizing why patients react in the manner that they do, so that the proper psychological procedure is followed. An understanding of the "life style" and "family constellation" of the patient would be very useful.

The bibliography of fourteen textbooks is well chosen for those who desire a more complete coverage of hypnosis.

D. S. Moore.

THE ASSOCIATION

ANNUAL MEETING — MONTREAL 1958 CHANGE OF DATES

Board of Governors — October 22 - 25

Convention — October 26 - 29

Technicians Propose Bills in Two Western Provinces

In both British Columbia and Alberta technician bills have been proposed in the legislatures.

Bill No. 45 in B.C., an Act Respecting Dental Technicians, proposed that technicians be permitted "to make, produce, reproduce, construct, furnish, supply, alter or repair any prosthetic denture and for such purposes deal directly with the person for whom the denture is intended". This bill was introduced as a government measure and without advance notice. The first information of the existence of the bill was when the first reading was given. Immediately organized dentistry in British Columbia instituted a strenuous campaign against the bill. On second reading the words "and for such purposes deal directly with the person for whom the denture is intended" were deleted together with several other minor amendments. The bill has received third reading and grants the establishment of a technicians' board with registration and licensure.

In Alberta the proposed bill seeks to have the Alberta Public Denturists Society incorporated under an act of its own. The vice-president of the society states that they still hope to have the bill introduced as a government measure, but, if not, as a private bill. The bill proposes that the denturists' society register and license members and set up a training program.

The reason given for the bill is to secure more privileges than exist under the

present Public Health Act. The provisions of this act in Alberta have allowed technicians to make dentures directly for the public provided that a qualified dentist is associated with the technician under certain specified conditions.

Canadian Dental Association Retirement Savings Plan

First information respecting the Retirement Savings Plan was issued near the end of 1957 (December 18), leaving little time for members of the Association to register in order to secure deduction for the taxation year 1957. As shown below, there was an immediate response by over three per cent of the membership. Considering the short time for action, this response is gratifying. It is anticipated that the Funds will expand greatly as members become better acquainted with the plan.

The contributions made by the members under the Plan for the quarter ending February 28, 1958, and applicable to the taxation year 1957, amount to \$121,464.00. Here is the breakdown of these contributions into the three Funds:

1. Government Bond		
Fund	\$ 19,698.30	16.2%
2. Corporate Bond		
Fund	40,382.80	33.2%
3. Common Stock		
Fund	61,382.90	50.6%
Total	\$121,464.00	100.0%

188 members registered under the Plan. 160 of these made contributions. Average contribution per member amounted to approximately \$760.00. All members under the Plan have been officially registered with the Department of National Revenue at Ottawa. Income tax receipts have been mailed.



**YOU ARE INVITED TO DISCUSS FRANKLY
MY SERVICES OR MY FEES.**

*The best dental service
is based on mutual understanding.*

PUBLIC RELATIONS PLAQUE

This plaque has been authorized by the Public Relations Committee of the C.D.A. for use in dental offices. Similar plaques are used by other professional groups in Canada and the United States.

Because misunderstandings between patients and dentists can often be precluded by friendly discussion, the committee decided to offer these plaques to be used as an indication of dentists' goodwill. The plaques are beautifully gold-lettered on a shiny black plastic surface mounted on a masonite-type backing approximately 10" x 6 $\frac{1}{4}$ " in size. They are equipped with wall hanger and desk easel.

The inscription reads "You are invited to discuss frankly my services or my fees. The best dental service is based on mutual understanding". Price is \$2.00 each, available from C.D.A. Headquarters.

Manitoba Ready for 30 Students

First calendar of the Faculty of Dentistry of the University of Manitoba is now in print.

Registration of the first class in Dentistry is scheduled for September 5th and 6th, 1958. Dean J. W. Neilson has announced some appointments to the new dental faculty, including Dr. George A.

Brass, currently at Alberta, as Professor of Operative Dentistry.

Initial interest in establishing dental education at the University of Manitoba is recorded in the minutes of the 1896 meeting of the Manitoba Dental Association. Many subsequent reports recommended the establishment of a dental faculty but nothing concrete occurred until

1956. Then Dr. K. J. Paynter was appointed by the Provincial Government to prepare a report concerning a School of Dentistry in Manitoba.

Early in 1957 the government allocated funds to establish and maintain a Faculty of Dentistry as a part of the University of Manitoba. Dr. Neilson was appointed first Dean last summer and plans were drawn for a dental building near the Medical College and Winnipeg General Hospital.

A maximum of thirty students can be accepted this year. Facilities are being made available in the Medical College until completion of the new dental building, expected by September 1959.

D. Prescott Mowry Memorial Lecture Established

The members of the dental profession in Montreal, in common with their confreres in the fields of periodontology and dental education, have felt very deeply the death three years ago of Dr. D. Prescott Mowry, Dean of the Faculty of Dentistry, McGill University.

Wishing to pay tribute to his memory and perpetuate his ideals, the Mount Royal Dental Society has resolved to institute an annual D. Prescott Mowry Lecture, to which all dentists and dental teachers in Montreal and its environs are invited.

On Monday evening, April 14th, 1958 at 8:00 p.m. in the Amphitheatre of the Montreal General Hospital the inaugural lecture was delivered. The speaker was B. O. A. Thomas B.A., D.D.S., M.S., Ph.D., clinical professor of periodontics, College of Physicians and Surgeons, San Francisco, California. His topic was "Occlusion and Periodontal Disease".

Dr. Thomas has taught at Columbia University and the University of Washington, previous to his present appointment. He practises periodontics in Palo Alta, California, and has published numerous papers and contributed to four textbooks in dentistry. He is a Diplomate and Director of the American Board of Periodontology.

Almost Million Canadians Drink Fluoridated Water

Almost one million Canadians are now drinking water with fluoride content adjusted by fluoridation. Many thousands more have, for many years, been drinking water with similar fluoride content derived only from underground deposits.

Several communities have approved by plebiscite the fluoridation of their water supplies but do not yet have the necessary equipment in operation.

The results of the annual C.D.A. survey of municipalities which have begun fluoridation are shown in the following list.

MUNICIPALITIES WITH CONTROLLED FLUORIDATION

(January 1, 1958)

MUNICIPALITY	DATE STARTED	POPULATION AFFECTED	
Newfoundland none			
Prince Edward Island none			
Nova Scotia			
Halifax	June 11, 1956	90,871	
Dartmouth	July 3, 1956	20,004	
Kentville	Feb. 16, 1956	4,840	115,715
New Brunswick None			
Quebec			
Joliette	1957	18,168	
Pointe Claire	Feb. 3, 1955	15,067	
Sillery	Oct. 19, 1955	13,800	47,035
Ontario			
Brantford	June 20, 1945	51,557	
Brockville	Feb. 18, 1956	15,000	
Deep River	Dec. 9, 1952	3,000	
Fort Erie	Jan. 18, 1952	8,567	
Oshawa	Feb. 26, 1953	50,136	
Sudbury	Aug. 20, 1952	50,000	
Thorold	Feb. 12, 1952	8,000	
Tisdale Township	Oct. 3, 1955	8,000	204,260
Manitoba			
Brandon	Mar. 8, 1955	24,579	
Portage la Prairie	Jan. 10, 1957	10,374	
Winnipeg	Dec. 28, 1956	409,687	444,640
Saskatchewan			
Assiniboia	May 1953	2,027	
Eston	Sept. 1957	1,578	
Moose Jaw	Dec. 1952	29,603	
Saskatoon	July 1955	72,858	
Swift Current	Oct. 1954	10,612	
Weyburn	Mar. 1955	7,684	
Wynyard	Aug. 1956	1,625	125,987
Alberta none			
British Columbia			
Kelowna			
(incl. Glenmore)	Sept. 15, 1956	10,468	
Prince George	Sept. 13, 1956	10,563	
Prince Rupert	Mar. 1, 1957	10,498	
Smithers	June 21, 1955	1,962	33,491
CANADA TOTAL			971,128

THE PROVINCES

BRITISH COLUMBIA

Victoria and District Dental Society

The visit of the C.D.A. President and Secretary took place on March 3 at the society meeting in the Empress Hotel with forty-four members and guests in attendance.

Dr. M. J. T. Dohan introduced Dr. A. G. Racey who delivered a stimulating address. His theme placed emphasis on personal responsibility for public relations by means of good citizenship, up-grading of professional standards, and encouragement of research and dental health.

Introduced by Dr. Charles Usher, Dr. Don Gullett followed with a detailed survey of health scheme potentialities which gave cause for thought. After hearing of the experiences in other countries under socialized dentistry, one became aware of the grave prognosis if such governmental control were introduced in Canada. The speaker outlined the pitfalls, and stressed that dentists must maintain control and administer their own services. Collective action in the profession is necessary and there must be no delegation of thinking.

Both speakers were suitably thanked by Dr. T. H. Johns.

B.C. Dentists Honoured

Dr. Harold Cline of Vancouver has been elected Vice-President of the Washington, B.C. section of the American College of Dentists.

Dr. A. Ian Hamilton, who practised in Victoria for several years and is now Associate Professor of Operative Dentistry at the University of Washington Dental School, has been named an associate member of the American Academy of Restorative Dentistry. The group, composed of clinicians and those in academic dentistry, is limited to 150 members. Also honoured by membership in the Academy is Dr. Gerald D. Stibbs, a former Vancouver practitioner who is now Professor of Operative Dentistry at the Washington School.

D. H. M.

NOVA SCOTIA

Halifax County Dental Society

The Halifax County Dental Society met in February under the chairmanship of the President, Dr. Carl Dexter.

Speakers for the evening were Drs. John Vaughan and William MacNeil, who gave very instructive addresses on "Sedatives, Hypnotics and Narcotics" and "The Pharmacology of Local Anaesthetics."

The March meeting was addressed by Dr. Sigsworth, Head of the Poison Control Centre of the Children's Hospital. He gave a very interesting talk on the set up and functions of his department in the control and treatment of poisoning.

H. M. E.

ONTARIO

Oxford County Dental Society

The Oxford County Dental Society held its first annual meeting at Wolstenholme's banquet hall recently. Dr. Richard L. Treleaven was elected president of the society.

Other dentists in attendance were: Dr. H. C. Parrott, Dr. J. A. Cummer, Dr. J. J. Mathews, Dr. G. O. McLay, Dr. R. J. Thompson, Dr. W. C. Klein, Dr. R. M. McQueen, of Woodstock; Dr. A. W. Waring, Dr. C. J. Kennedy, Dr. L. W. Staples, Ingersoll, and Dr. C. Stickel, Tillsonburg.

Peterborough and District Dental Society

The March meeting of the Peterborough and District Dental Society was held at the Empress Hotel, Peterborough, on March 12th, 1958. There were sixteen members present.

In the absence of Dr. Reg. Campbell, Dr. Ralph Green presided. After the business meeting, Dr. John Methven of Toronto addressed the society on "Pharmacology and Its Relationship to Dentistry".

It was decided that the annual meeting for election of officers be held in April.

R. M. N.

Academy of Dentistry, Toronto, Holds Dinner-Dance

On Friday, February 21, the Academy of Dentistry, Toronto, held its dinner-dance at the Granite Club. Eighty-five charming ladies joined their husbands in Toronto's first formal dental party in many years. Several groups assembled beforehand at individual cocktail parties, one of which was attended by a friendly contingent from Hamilton. Dinner in the Ballroom was followed by a delightful evening of dancing to the music of Frank Bogart and his orchestra. All those who attended agreed that this wonderful party must be repeated next year. The date to remember is Friday, March 6, 1959.

Academy of Dentistry Inaugurates Emergency Service

Toronto's Academy of Dentistry inaugurated an "after hours emergency service" on March 31. Henceforth, patients needing after hours emergency care, may call the Academy office if unable to reach their own dentists. The call will be intercepted and the patient's name and telephone number recorded. One of the dentists on call for that particular period will then be notified so that he may contact the patient.

The service has been organized on a purely voluntary basis, with most men serving only twice in a one year period. Forty-four dentists volunteered to be available one night each month and six are available at any time. The Ontario Society of Oral Surgeons has notified the Academy that its members will be available at any time deemed advisable by the dentist on call. Two dentists will be on call each night and on weekends.

The Academy is pleased to institute this much-needed service for the benefit of the people of Metropolitan Toronto.

E. R. B.

Toronto Academy Reports On Year's Activities

Since the beginning of the present year, the Academy of Dentistry, Toronto, has held three Stated Meetings at Osler Hall. The new year was opened with a joint meeting on January 16th, 1958, with the Toronto Academy of Medicine. Drs. Harry Hunter and W. G. McIntosh represented the Academy of Dentistry along with two panelists from the Academy of Medicine. These men dealt most fully with the timely subject "The Importance of Focal Infection".

The First Stated Meeting held on Janu-

ary 23rd, 1958, saw Dr. Maurice J. Saklad of New York expound on the Clinical Management of Mutilated Anterior Teeth for Aesthetics. The Second Meeting on February 13th, 1958, had Dr. Marvin C. Goldstein of Atlanta, Georgia, dealing with "Orthodontic Problems of the Adult for the General Practitioner". On March 20th, 1958, the Third Meeting was held with three essayists from Toronto, Dr. George C. Hare, Dr. John Speck and Dr. Robert Diprose, dealing as best they could in an all too short thirty minutes with respectively, Endodontics, Periodontics and Surgery. Each essayist presented his subject with great enthusiasm and specific illustrations.

All meetings were well attended by Academy members and following each meeting a pleasant social hour was enjoyed by all.

Your Academy, along with the Dental Alumni, inaugurated a splendid idea and one which we are certain will be held again next year and your retiring Council should be congratulated for its efforts, especially the committee convening this event. The writer refers to the Dinner-Dance held on February 21st, 1958, at the Granite Club. A pleasant cocktail hour preceded this dance and the meal was superb. Frank Bogart's orchestra supplied the much enjoyed music and the highlight of the evening was the dance team of Dennis and Maxine. It was gratifying to the committee to see so many of the fellows and their friends in attendance and next year will be a sell-out for sure so be certain to register early.

On March 20th, 1958, the Past President's Dinner was held in the Rose Room of the Granite Club, preceded by a cocktail hour at which many old acquaintances were renewed. It was pleasant to see so many of the "old guard" present and to honour the memory of our deceased. Following dinner, the members adjourned to the meeting at Osler Hall.

The retiring council which deserves a great vote of thanks from all members is as follows:

President, Dr. R. W. Marshall; Pres.-Elect, Dr. Wm. A. Weir; Secretary, Dr. J. A. Bigelow; Treasurer, Dr. Vernon A. Herron; Past President, Dr. H. Milburn; Councillors: Dr. J. Mullett, Dr. A. Histrop, Dr. R. Leuty, Dr. A. E. K. Hogg, Dr. S. Mednick, Dr. F. Froud.

The new council for 1958-59 was reported in the April issue.

We sincerely hope that all members will give the same support to the incoming council and all their endeavours as they have done in the past year. Remember, the Academy is yours, and your elected council works for you.

E. R. B.

Niagara Peninsula Dental Association

The last regular meeting of the Niagara Peninsula Dental Association took place on Friday, March 14th at the Esquire Hotel, St. Catharines. This was a special meeting and took the form of an all day seminar. Dr. Kerr, head of the Department of Periodontology, University of Michigan, Ann Arbor, was the speaker.

The meeting was well attended and most informative. Dr. Kerr illustrated his seminar with slides and movies. The new executive was installed.

London and District Dental Society

The London and District Dental Society held its fifth regular meeting of the 1957-58 season Saturday, March 15, 1958, at the Hotel London. Sixty-nine members and guests from London and District were in attendance.

The Society was privileged to have as a guest speaker Dr. Don W. Gullett, Secretary of the Canadian Dental Association. The speaker was introduced by Dr. L. V. Taylor and the subject of his address was "Present Legal Aspects of Dental Practice". Dr. Gullett's address was very broad in its scope and touched on many aspects of law and legislation pertaining to the practice of dentistry. He outlined many of the serious problems facing our profession at the present time and the way in which they were being dealt with by our representatives. Dr. Gullett briefly discussed some aspects of taxation as well as the numerous other legal and legislative matters involving the individual dentist as well as the dental profession as a whole. The speaker was thanked on behalf of the Society by Dr. B. G. Riggs.

D. W.

QUEBEC

Montreal Dental Club

The monthly dinner meeting of the Montreal Dental Club took place on Monday, March 17th, in Salons A, B and C of the Queen's Hotel.

Following the evening meal and the reading of the minutes of our last meeting, Club President Dr. R. F. Harvey reminded those present of the inaugural D. P. Mowry Memorial Lecture under the auspices of the Mount Royal Dental Society on Monday, April 14th, and of the "Disaster Insurance" policy which is available to M.D.C. members.

The Dr. Bobby Bell trophy for the most

valuable player on the McGill Senior Hockey team this year was presented to Dick Balzta, a third year medical student, by Dr. Roger McMahon.

Dean James McCutcheon introduced the guest speaker of the evening, well known Periodontist Dr. Frank E. Beube, whose well-presented talk on Periodontal Surgery, illustrated by both coloured slides and film, proved most interesting and instructive. Dr. Beube pointed out that Periodontal Surgery was only one phase of Periodontics, and that the most common type of periodontal lesion was Periodontitis, the causative factors of which were mainly local irritation. These irritating factors, he stated, are influenced primarily by the nature of the patient, the oral hygiene and loss of teeth. Dr. Beube stressed that the vast majority of periodontal cases can and should be treated conservatively. He emphasized that the basic procedure in treatment was that of prophylaxis and curettage followed by sound home care. "Before and After" slides of cases so treated left no doubt as to the effectiveness of such procedure. However, in cases of deep and extensive pocketing, this basic procedure is not sufficient to effect a cure, and in such cases one should resort to surgery. The coloured film showing instruments used, procedures followed and results obtained in the surgical treatment of a periodontal condition, concluded Dr. Beube's presentation.

Following a most interesting question period, Dr. Arnold Mitchell, on behalf of the M.D.C., thanked the guest speaker.

W. D. S.

SASKATCHEWAN

Regina and Saskatoon Dental Societies

The visit of the officers of the Canadian Dental Association was again an outstanding success. Since this tour across Canada is now complete we wish to express our sincere appreciation for the excellent services rendered by these officers to the profession and to Canada.

Dr. A. Gerald Racey, the President, is one who has particularly fitted himself for his life's work. His post graduate work in Oral Pathology and Diagnosis has enabled him to contribute as a professor. He has taken a keen interest in all matters pertaining to the profession and has served many years on the Canadian Dental Association.

Dr. Racey spoke of pertinent matters concerning Dentistry such as the complacency of the members of the profession, the need for more teaching facilities, the lack

of qualified teachers for dental schools, contributions by the Kellogg Foundation, the need for the recruitment of the proper type of students, the responsibilities of dentists and auxiliary personnel, and dental research.

Dr. Don W. Gullett, the Secretary, made his usual vital contribution in his address on matters affecting the profession. In particular, he made reference to the Retirement Plan, and more particularly the problems associated with Health Service Plans. He

spoke of the difficulties in administration and the quality of services. He admonished the members of the profession to make studies so that we will be in the position to assist in the organizing of Dental Health Plans.

The Dental Profession has grown considerably in stature in the last generation. This growth has been due to the leadership provided by the elected officers and in particular to that of the Secretary.

L. D. H.

GENERAL NEWS

A.M.A. House of Delegates Reaffirms Endorsement of Water Fluoridation 'As A Safe, Practical Method of Reducing Incidence of Dental Caries'

The American Medical Association, "on the basis of an exhaustive new study," has reaffirmed its view that water fluoridation is a safe method of reducing the incidence of dental decay. In a reference committee recommendation adopted by the House of Delegates December 5th, 1957 at the annual clinical meeting of the A.M.A. in Philadelphia, fluoridation was described as "a safe and practical method of reducing the incidence of dental caries during childhood." The committee's recommendation was based on an extensive analysis of fluoridation by two A.M.A. councils — the council on drugs and the council on foods and nutrition — which a year ago were commissioned by the A.M.A. House of Delegates to study all available information concerning the fluoridation of public water supplies and make recommendations. "This new study and its findings, while more exhaustive, are essentially the same as the report of the same two councils, which was made in 1951," A.M.A. spokesmen pointed out. At that time, the A.M.A. report said "the councils believe that the use of drinking water

containing up to one part per million of fluoride is safe." The 1951 report was approved by the House of Delegates. "Since then many studies have been made, many observations have been recorded and many opinions have been expressed," Dr. James P. Leake, of Washington, D.C., vice-chairman of the A.M.A. council on drugs, said. "All of them were given careful review and study." The latest report of the A.M.A. councils, approved by the House of Delegates, said in part:

No evidence has been found since the 1951 statement by the councils to prove that continuous ingestion of water containing the equivalent of approximately 1 ppm. of fluorine for long periods by large segments of the population is harmful to the general health. Mottling of the tooth enamel (dental fluorosis) associated with this level of fluoridation is minimal. The importance of this mottling is out-weighted by the caries-inhibiting effect of the fluoride.

The closing paragraph of the 27-page report by the two councils said: "Fluoridation of public water supplies should be regarded as a prophylactic measure for reducing tooth decay at the community level and is applicable where the water supply contains less than the equivalent of 1 ppm. of fluorine."

Full Income Tax Deduction Urged for Dental Expenses

Deduction of all dental and medical expenses as casualty losses for income tax purposes was urged by the A.D.A. recently. In a letter to Rep. Mills (D., Ark.), chairman of the Ways and Means Committee of the House of Representatives, Dr. Ralph Creig, of Cleveland, vice-chairman of the Association's Council on Legislation, pointed out that the A.D.A. is on record favouring a revision of existing tax laws. Currently, taxpayers are permitted to deduct dental and medical expenses which exceed three per cent or more of adjusted gross income. "The opportunity to deduct all dental and medical expenses as a casualty loss would be particularly beneficial to the taxpayer who has borne the expense of a catastrophic illness for himself or one of his dependents," Dr. Creig said. He also pointed out that the removal of the limitations "Would encourage many citizens to seek treatment for their health conditions at an early stage of illness."

A.A.D.S. Elects New Officers

Dr. William H. Crawford, dean of the School of Dentistry, University of Minnesota, took office as president of the American Association of Dental Schools at its 36th annual meeting March 23-26 in Detroit. Dr. Crawford succeeded Dr. Roy G. Ellis, dean of the Faculty of Dentistry at the University of Toronto. Others named to office were Dr. Robert W. McNulty, dean of the Schools of Dentistry, University of Southern California, president-elect; Dr. Raymond J. Nagle of the College of Dentistry, New York University, vice-president, and Dr. Marion McCrae, of the University of Minnesota, who was re-elected secretary-treasurer. Dr. Harry Lyons, dean of the School of Dentistry, Medical College of Virginia, was named to the executive committee. Next year's meeting of the organization will be in San Francisco.

New York Fluoridation Bill Called 'Demonstration of Dark Ages Thinking'

Two bills that would forbid fluoridation without a referendum were acted on by the New York state legislature recently. One measure failed of passage in the General Assembly. The other, which was directed specifically at New York City, would re-

quire a referendum in that city before the measure could be placed in operation. New York is one of the few major cities in the United States without the program. The bill was approved by the New York State Senate and awaits the perusal of the General Assembly.

In a message to some members of the state legislature, Dr. Percy T. Phillips, of New York, president-elect of the A.D.A., pointed out that the public generally is not qualified to evaluate a scientific measure. "It seems basically unfair," Dr. Phillips said, "to impose upon the general public the necessity of making a definitive determination of a basic scientific problem upon which it cannot be expected to be as a whole formally trained and qualified." The same point was emphasized in a *New York Times* editorial March 5 which deplored the State Senate action on fluoridation as "an appalling demonstration of Dark Ages Thinking." "No one but a scientist or a medical or dental authority is competent to judge its effectiveness or its safety," the editorial said. "How can the man in the street possibly have the scientific information to decide this question for himself? Would you insist that he vote for or against pasteurization of milk, or inoculation against disease, before official authority could put in effect such preventive measures for protection of the public health? . . . To pass this anti-science, anti-home rule bill is an appalling demonstration of Dark Ages thinking. We suppose the Senate will now vote to declare the earth flat and annul the law of gravity."

U.S. Dentists Shortage Estimated At 13,500

The number of dentists in the United States has become progressively disproportionate to public needs during the past 27 years, reported Dr. Quentin M. Smith, assistant chief, Division of Dental Resources, Public Health Service.

Within the same period, he added, the public's appreciation of good dental care, and the ability to afford it, have increased substantially.

Estimating the current shortage of dentists in the United States at 13,500, with California and States in the Great Lakes and southwest regions showing acute shortages, Smith pointed out a need to expand dental training facilities if the Nation's oral health is to be protected.

THE CORPS

Official Opening of R.C.D.C. School Announced

Official opening of the R.C.D.C. School, Friday, June 13, 1958. The Minister of National Defence, The Honourable George R. Pearkes, V.C., will officially open The Royal Canadian Dental Corps School at Camp Borden at 2:00 p.m., Friday, June 13th, 1958, in the presence of senior officers representing the three Armed Services. Invitations are also being extended to civilian associations representing the profession and the Faculties of Dentistry.

Serving and retired officers of the R.C.D.C. Regular and Militia, and ex-officers of the C.D.C. and the C.A.D.C. together with their ladies are cordially invited to be the guests of the Corps at the opening ceremonies, the inspection of the School, and the garden party to follow this important event in the history of the profession in the Armed Forces of Canada.

Ex-officers of the Corps are requested to notify the Director General of Dental Services, National Defence Headquarters, Ottawa, of their intention to attend by June 2, 1958.

Brigadier Wansbrough Attends Civil Defence Conference

Brigadier E. M. Wansbrough represented the Royal Canadian Dental Corps at the Conference on Common Approach Survival Operation held at the Canadian Civil Defence College, Arnprior, March 24, 25, 26, under authority of the Minister of National Defence and the Minister of National Health and Welfare.

R.C.D.C. Publishes Handbook on Partial Dentures

The Royal Canadian Dental Corps announces the publication of "A Handbook of the Fundamentals of Partial Denture Planning" by Colonel G. B. Shillington, C.D., D.D.S., B.Sc. (Dent.), F.I.C.D., Senior Consultant in the office of the Director General of Dental Services.

As a public service, this text has been made available to the civilian profession and may be obtained from the Queen's Printer, Ottawa, at the nominal cost of one dollar a copy. The catalogue number when ordering is DA3-3258.

Major H. W. Hart Retires

Army Headquarters has announced the retirement of Major H. W. Hart, C.D., from the Royal Canadian Dental Corps (Regular).

Major Hart is a native of British Columbia. He attended the Faculty of Arts and Sciences, University of British Columbia, and the Dental School, University of Oregon, graduating in 1940 with the degree D.M.D.

Major Hart was appointed to the Canadian Dental Corps in November, 1940, in Victoria, B.C. He served in the United Kingdom, Central Mediterranean, Northwest Europe, and with the Occupation Force from June, 1941 until January, 1947, having been Mentioned in Despatches during his service in Italy. Since September, 1947, he has been employed in the Maritimes, Quebec and Ontario.

Major Hart was an instructor at The Royal Canadian Dental Corps School for six years, and for four years held the appointment of Chief Instructor.

During his service career, Major Hart has attended a number of courses in advanced and post-graduate professional subjects in England, United States and Canada, including six months in Advanced Prosthodontics at the United States Naval Dental Corps School, Bethesda, Maryland.

He has appeared on the programs of the Canadian Dental Association, the American Denture Society, the Ontario Dental Association and a number of local societies.

Major Hart has been appointed Professor and Chairman of the Department of Prosthetic Dentistry at the University of Manitoba.

The Corps wishes him continued success.

Captain Duesling Enters Civilian Practice

Captain C. J. Duesling has been released from the R.C.D.C. (R) and will enter civilian practice in Ottawa.

Captain Duesling was born in London, Ontario. He enlisted in the C.A. (A.F.) in 1943 and saw service in Canada and overseas until his release in 1946.

Entering the Faculty of Dentistry in 1947, he graduated with the degree of D.D.S. in 1953 and was commissioned in the R.C.D.C. in January, 1954, serving at various locations in Ontario until his release, April 1, 1958.

Lt.-Col. Wilson Honoured

Lt.-Col. D. T. Wilson, who is retiring as Commanding Officer of No. 51 Dental Unit (M), has been honored by members of the Saint John unit at a gathering in the Armoury there. Col. Wilson will take up a business career in Florida. A presentation was made to Col. Wilson by Colonel J. F. Edgecombe, Assistant Director of Dental Services (Militia) for Eastern Command. Colonel Edgecombe spoke of Lt.-Col. Wilson's service and record in the Canadian Dental Corps in the last war. Major G. L. Ramsay of Saint John will temporarily

assume Lt.-Col. Wilson's command. Prior to his Saint John visit, Lt.-Col. Wilson was honoured at a dinner held in the Lord Beaverbrook Hotel by the Fredericton Dental Society. He was presented with a gift by Dr. B. R. Ross.

Major Butler Attends Operative Dentistry Course

Major J. G. Butler attended a course in Operative Dentistry at the University of Michigan. He is now employed at Downsview, Ontario.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

Additions

DENTAL CLINICS OF NORTH AMERICA, March, 1958: Symposium on practical oral therapeutics. F. Darl Ostrander, consulting editor. 276 p. illus.

EGERTER, B. C.: Professional practice management. 1957. 504 p. illus.

KAMPMEIR, O. F., COOPER, A. R., and JONES, T. S.: A frontal section anatomy of the head and neck. 1957. 25 fig.

MICHIGAN UNIVERSITY: The practice of dental public health; proceedings of the fourth workshop on dental public health, "Objectives and Evaluation of a State's Dental Program." April 2-6, 1956. 198 p. tables.

IN MEMORIAM

William A. Allen — Dr. William A. Allen died in Victoria, B.C., on March 18, aged 56. Born in Victoria in 1901, he graduated from the North Pacific Dental College of Portland, Oregon, in 1925. He first practised in Kaslo, B.C., for two years and then moved to Ocean Falls where he remained for

twelve years, returning to Victoria to practise in the year 1939.

Dr. Allen was a keen fisherman and had an ardent interest in golf. He is survived by his wife, Marie, in Victoria, a son, Donald, a pilot for C.P.A. in Vancouver, and a sister, Ethel, in Victoria.

Wyatt Bradfield Macdonald — Dr. Wyatt Bradfield Macdonald of Port Arthur, Ontario, died on February 25, 1958.

He was born on May 10th, 1900, at Fort William, Ontario, and received his early education at Fort William and St. André's Preparatory School, Toronto. He graduated from the Faculty of Dentistry, University of Toronto, in 1926. Dr. Macdonald practised in Fort William from 1926-28 and in Port Arthur from 1928-58.

Dr. Macdonald was past president of Thunder Bay Dental Society. He was a member of Fort William Lodge 82, BPOE, Fort William Curling Club, Port Arthur Golf and Country Club and executive member of the Thunder Bay Baseball Association. Dr. Macdonald was Lieutenant, 4th Field Ambulance R.C.A.M.C. in 1940

Surviving are his wife and one sister.

Emile Nadeau — Dr. Emile Nadeau died at his home in Saint Leonard, New Brunswick, on February 18th, 1958. He was 54 years of age.

Dr. Nadeau was born in Saint Leonard where he received his early education. He took his college course at Saint Joseph University in New Brunswick and graduated in dentistry from the University of Montreal. He opened his office in Saint Leonard and practised there until his death.

During his early years Dr. Nadeau was a hockey player. He was in many municipal organizations and he was elected mayor of Saint Leonard in 1939 and held the office until 1944. Dr. Nadeau ran for office in the provincial government on two occasions. In 1935 he ran as Independent and in 1944 as a Conservative candidate.

Surviving are his wife Marie-Louise, five daughters and six sons, also one sister.

Thomas Richard Peden — Dr. Thomas Richard Peden died at the age of 70 in Laguna, California, after an illness of short duration.

He was born in Glasgow, Scotland, and graduated in 1912 from the University of Southern California.

Dr. Peden practised in the Birks Building, Vancouver, for over 20 years before moving to California in 1931. He retired last year.

Survivors include one son, Thomas Peden, Jr., a daughter, Mrs. Shirley Fraser, both in California, two grandchildren, and several nieces and nephews in Vancouver.

John Archibald McArthur — Dr. John Archibald McArthur of Markdale, Ontario, died February 20, 1958.

Dr. McArthur was born at Priceville, Ontario, in 1885 and received his early education at Flesherton High School, Owen Sound Collegiate. He graduated from the R.C.D.S. of Ontario in 1909 and practised in Priceville from June, 1909, to November, 1910, and in Markdale from 1910 to 1958.

Dr. McArthur was a Past Master Masonic Lodge, and ex Justice of the Peace for the County of Grey, ex Councillor, Reeve and Member of High School Board for Village of Markdale. He was an ardent sportsman and a chartered member of Markdale Curling Club.

Surviving are his wife, and twin daughters, Vera and Vida. His son, Jack, died five years ago.

Albert James Broughton — Dr. Albert James Broughton of Toronto, Ontario, died on March 14, 1958.

Dr. Broughton was born in Toronto in 1873 and received his early education there. He graduated from the R.C.D.S. in 1900 and started his practice. In 1922 he moved to the Physicians' and Surgeons' Building, and continued his practice there until 1958. He was the first tenant in this building.

Dr. Broughton was the founder and secretary-treasurer of the Canadian Oral Prophylactic Association. He was past-secretary of the Toronto Chapter, International Association of Dental Research. He was made an Honorary Member of the R.C.D.S. in 1950.

Surviving are his son, Mr. J. H. Broughton, a sister, Mrs. E. Nield, and three grandchildren.

Henry L. Freeland — Dr. Henry L. Freeland of Calgary, Alberta, died on March 18 in San Francisco where he had been vacationing with his wife since early March.

Dr. Freeland was born in Portland, Oregon, and graduated from the Northwestern University in 1914. He practised dentistry in Calgary for 43 years.

A few years ago, Dr. Freeland received a signal honour, that of receiving an honorary degree in the form of a Fellowship in the American College of Dentists, at a convention of the American Dental Association. He was the first Calgary dentist to receive such a Fellowship.

He was past president of the Calgary Dental Society, the Alberta Dental Association and the Dental Council of Canada.

Surviving are his wife, a daughter, Dorothy, and a son, Robert.

ANNOUNCEMENTS

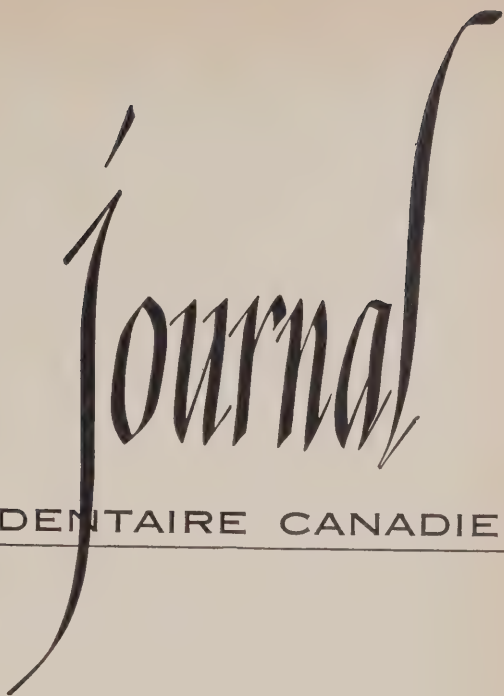
Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th—29th
1959	Halifax, Nova Scotia	June 21st—28th
1960	Ottawa, Ontario	Sept. 25th—28th
1961	Saskatoon, Saskatchewan	June 25th—28th

1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May
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FUTURE EVENTS

Date	Function	Location	Officer	Address
May 18-21, 1958	Convention—Ontario Dental Association	Royal York Hotel, Toronto	Mrs. A. Durham, Secretary	234 St. George St., Toronto 5, Ont.
May 18-21, 1958	Joint Convention of Ontario Dental Nurses & Assistants' Assoc. and the Dental Nurses' Alumnae Association	Royal York Hotel, Toronto	Miss E. J. McMullen, Convention Chairman	31 Brookdale Ave., Toronto, Ont.
June 15-19, 1958	Ninth Annual Berkshire Conference in Oral Pathology and Periodontology.	Eastover in Lenox, Mass.		Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.
June 22, 1958	Second International Conference on Endodontics.	University of Pennsylvania, Philadelphia.	Mrs. M. Kolb, Secretary	4001 Spruce St., Philadelphia 2, Pa.
July 20-23, 1958	52nd Annual Session, West Virginia State Dental Society	Greenbrier Hotel, White Sulphur Springs, W. Va.	Dr. T. A. Edwards Chairman	822 S. Kanawha St. Beckley, West Virginia
Aug. 27- Sept. 4, 1958	46th Annual Meeting, International Dental Federation	Brussels, Belgium	Dr. M. Joachim, Secretary	67 Rue de Treves Bruxelles, Belge.
Sept. 1-3, 1958	Saskatchewan Dental Association Convention and Refresher Course in Oral Surgery.	Regina, Sask.	Dr. G. W. Schwann, Registrar	613 McCallum-Hill Bldg., Regina, Sask.
Sept. 14-15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon	500 Albert St., Kingston, Ontario
Nov. 1, 1958	Annual Meeting, New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.
Nov. 7-8, 1958	Meeting of American Academy of Gold Foil Operators.	Dallas, Texas	Dr. C. C. Latham, Secretary	P.O. Box 266, Coronado 18, California
Dec. 8-12, 1958	Greater New York Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.



DE L'ASSOCIATION DENTAIRE CANADIENNE

Chirurgie corrective préprothétique chez l'édenté (tissus osseux)*

par JEAN KORBANDAU, D.F.M.P., D.E.O.P., Evreux, France

Transformations du procès alvéolaire

Le procès alvéolaire est formé de tissus osseux spongieux, recouverts par une lame de tissu compact et séparés de la dent par la lamina dura. Le procès alvéolaire n'a donc pas d'individualité et il n'existe pas de démarcation anatomique.

En effet, comme le souligne L. F. Edwards, le canal dentaire inférieur appartient de toute évidence à l'os maxillaire et cependant les racines de la dent de sagesse dépassent fréquemment son niveau. Aussi, le terme de procès alvéolaire représente donc seulement la portion d'os maxillaire (appelé à ce niveau os alvéolaire) qui contient et supporte les dents.

Formation et malformations

La forme et le volume du procès alvéolaire dépendent tout d'abord de l'éruption des dents sur l'arcade. Ses malformations étudiées par les orthodontistes sont étroitement liées aux malpositions dentaires. Les troubles de l'articulé et la perte des dents antagonistes expliquent par ailleurs l'hyperalvéolisme. Celui-ci peut être localisé à une dent ou s'étendre à un groupe de dents et parfois même à tout un maxillaire. Aussi les formes du procès alvéolaire sont-elles déjà très variables avant d'être perturbées par le processus de résorption. Il n'est pas utile de différencier ici les malformations acquises des malformations

congénitales, car les interventions chirurgicales sont les mêmes.

Résorption

La résorption du procès alvéolaire peut s'effectuer plus ou moins rapidement, plus ou moins régulièrement. De nombreux facteurs sont invoqués: d'ordre physiologique et mécanique, d'ordre pathologique.

1 — Physiologique et mécanique:

A la suite des extractions, le procès alvéolaire subit une transformation: l'os alvéolaire se résorbe et l'alvéole est comblée par du tissu spongieux. Une couche de tissu compact le recouvre pour former une crête, que l'on appelle: crête alvéolaire.

Ce premier temps de la résorption, lié à la cicatrisation, entraîne une diminution sensible du volume du procès alvéolaire, diminution qui permet d'ailleurs d'établir les prothèses restauratrices. Mais la résorption ne s'arrête pas là. Le procès alvéolaire, édifié pour la dent, tend à disparaître après la chute de celle-ci. Aussi, sa forme chez l'édenté, dépend-elle de la chronologie des avulsions. Au maxillaire inférieur, par exemple, la chute du groupe molaire précède très souvent la chute du groupe incisivo-canin et l'examen des mandibules édentées révèle en moyenne une résorption antérieure beaucoup moins avancée.

Le degré de résorption est donc fonction de l'âge de l'édentation mais également de l'âge du malade. La résorption est accélérée par la ménopause et se trouve liée à la sénescence. Mais il s'agit alors de troubles endocriniens et métaboliques.

La perte de fonction favorise la résorption. Les cloisons osseuses, du fait de leur étroitesse, ont une circulation terminale défectueuse et l'absence de pression entraîne une perturbation de la régénéra-

tion osseuse et une dégénérescence des cellules.

Au contraire, un excès de pression qui dépasse les limites de tolérance et surtout sa mauvaise répartition deviennent facteur prédisposant au processus de résorption. Ainsi, par exemple, on a remarqué qu'une prothèse partielle surélevant l'occlusion entraîne une résorption rapide du procès alvéolaire sur lequel agissent alors tous les efforts. De même, une dimension verticale mal observée et une surélévation de l'occlusion ayant pour but de permettre le montage des molaires artificielles conduit à une résorption compensatrice. On a remarqué également qu'en exécutant une prothèse complète en conservant les dents naturelles antagonistes, il se produisait une résorption beaucoup plus rapide sous la prothèse. Une arcade de dents naturelles exerce en effet une pression quatre fois supérieure.

2 — Pathologique:

Le processus de résorption n'est pas inhérent à la chute des dents. Les altérations du procès alvéolaire ont une étiologie complexe au cours de la vie de la dent sur l'arcade. La résorption peut alors être localisée à une dent ou à un groupe de dents dans le cas d'infection locale ou d'action caustique, ou s'étendre à une arcade entière.

La paradentose (ou polyalvéolyse) est caractérisée par la destruction progressive de l'os alvéolaire, destruction qui peut conduire à la fonte entière du procès alvéolaire.

Le tabès (heureusement beaucoup plus rare) occasionne une fonte alvéolaire accompagnée de la chute analgésique des dents.

Nous pouvons noter également les rôles joués par l'absorption des substances toxiques (phosphorées et mercurielles)—les troubles endocriniens (hyperparathy-

roidie et hyperthyroïdie)—les troubles du métabolisme calcique et enfin l'avitaminose C. et D. Ce sont les principaux facteurs qui peuvent conditionner le processus de résorption, processus alors indépendant de la chute des dents.

Correction des Tissus de Revêtement

Les tissus de revêtement des crêtes alvéolaires sont constitués par une fibro-muqueuse (épithélium pavimenteux stratifié) qui recouvre un chorion riche en fibres élastiques et par une muqueuse simple dépourvue du chorion sous-jacent.

La fibro-muqueuse, épaisse et dense, recouvre le sommet des crêtes et le versant palatin de l'arcade supérieure. Elle représente la "zone d'appui primaire" de la prothèse. Mais l'épaisseur et la densité du chorion ne sont pas identiques en tous points. Plus grandes au maxillaire supérieur, elles sont maxima au niveau de la tubérosité.

La muqueuse, mince et souple, recouvre les versants vestibulaires et lingual des crêtes supérieure et inférieure. Elle repose sur une base de tissu cellulaire lâche et sur des fibres musculaires mobiles. Elle représente une surface d'appui délicate, "secondaire", utilisée par le prothésiste pour la réalisation du joint périphérique.

Un examen préprothétique des tissus de revêtement doit être réalisé pour permettre d'apprécier leur valeur fonctionnelle. Celle-ci peut varier avec chaque malade. Elle est fonction de l'état de santé et de l'hygiène buccale, de la résorption et surtout du port des prothèses antérieures. Ces deux derniers facteurs peuvent entraîner des modifications anatomiques et pathologiques qui requièrent une correction chirurgicale.

Modifications anatomiques

Les modifications anatomiques des tissus de revêtement intéressent leur

changement de volume consécutif à la résorption de l'os alvéolaire sous-jacent. La charpente osseuse ayant disparue, les "parties molles" possèdent une désignation plus que jamais justifiée. Leur mobilité nuit à la stabilité de la prothèse et leur ablation s'avère nécessaire.

Par contre, au niveau de la tubérosité, la fibro-muqueuse étant de nature très dense, les tissus de revêtement ne présentent pas la même mobilité. Mais en dépit de la résorption osseuse, la hauteur d'occlusion postérieure peut être insuffisante et l'indication de réduction de l'épaisseur de la fibro-muqueuse à ce niveau se justifie.

Modifications pathologiques

Les modifications pathologiques des tissus de revêtement chez l'édenté résultent de l'action d'une épine irritative interne ou externe.

L'épine irritative interne est représentée par une esquille osseuse ou une racine fracturée. La présence de cette irritation se traduit par une hyperplasie locale, manifestation inflammatoire chronique désignée sous le nom d'épulis granulomateux. C'est une prolifération de tissu de granulation, de couleur jaune ou rouge, qui peut devenir pédiculée et qui récidive malgré l'exérèse si la cause ne se trouve pas éliminée.

L'épine irritative externe est représentée par le trauma prothétique. Les manifestations inflammatoires qui en résultent sont moins localisées et peuvent s'expliquer mécaniquement: les bords de la prothèse, imparfaitement adaptés ou trop aigus, blessent la muqueuse gingivale (particulièrement mince et fragile). Le point de départ de l'inflammation n'est souvent qu'une petite ulcération elliptique, crevassée, à fond blanc jaunâtre, aux bords rouges et tuméfiés. Il se développe bientôt à ce niveau une excroissance de tissu mou, que l'on dé-

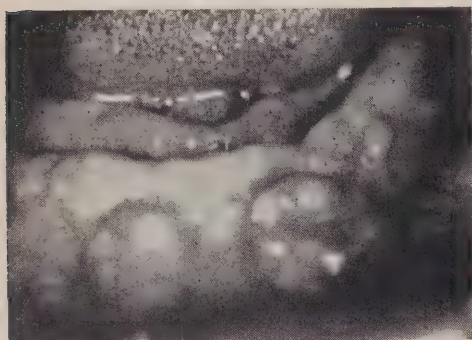


FIGURE 1
Hyperplasie alvéolaire



FIGURE 2
Epine irritative externe

signe sous le nom d'hyperplasie alvéolaire. Le traumatisme peut être entretenu durant plusieurs années et le développement hyperplasique consécutif réside en une masse de muqueuse rouge sans consistance; ou en feuillets fibreux, à bords irréguliers taillés en demi-cercle, souvent séparés de la muqueuse sous-jacente dans leur partie terminale (Fig. 1 et 2, p. 4).

Le traumatisme peut être étendu à toute la surface d'appui de la prothèse, lorsque celle-ci est mal équilibrée ou déséquilibrée. Le déséquilibre survient, par exemple, lorsque le malade possède la même prothèse complète du haut depuis dix ou vingt ans, alors que persistent les dents antéro-inférieures seules, à l'exclusion des prémolaires et molaires inférieures. L'action exercée par les dents antéro-inférieures représente un trauma violent pour le processus alvéolaire supérieur. La résorption alvéolaire s'accompagne alors d'hypertrophie de la muqueuse, sans qu'il y ait à proprement parler d'inflammation. Il se produit une hyperplasie diffuse des tissus de revêtement, hyperplasie très peu réversible, qui compense, sous la prothèse, la disparition de l'os sous-jacent.

Avant de réaliser un rebasage ou d'établir une nouvelle prothèse, il est nécessaire de traiter le malade. Le traitement est en premier lieu étiologique et l'exérèse chirurgicale n'est recommandée que trois semaines à un mois après l'abandon

de la prothèse, si les tissus n'ont pas retrouvé leur aspect normal.

1 — Correction au niveau des crêtes

L'intervention qui consiste à réduire l'importance des parties molles au niveau des crêtes reste la même aux maxillaires supérieur et inférieur, dans la portion antérieure ou postérieure.

1er temps:

Incision verticale jusqu'à l'os, en suivant le sommet de la crête, un cm. au-



FIGURE 3



delà de la zone à corriger (Fig. 3, haut gauche).

2ième temps:

A l'aide d'une pince de Kocher, saisir l'extrémité du lambeau vestibulaire et exécuter une incision à 45° qui rejoigne le sommet de la crête osseuse. L'angle de l'incision diminue à mesure que l'on se rapproche des extrémités de la première incision, pour se confondre avec elle. Éliminer de la même façon la partie supérieure du lambeau opposé; nous réalisons ainsi une résection elliptique (Fig. 3, haut droit).

3e temps:

Diminuer ensuite l'épaisseur des deux lambeaux avec la lame no 15, de façon à les rejoindre au sommet de la crête sans exercer de tension excessive avec les points de suture (Fig. 3, bas).

Remarque:

Les descriptions classiques de cette intervention ne mentionnent pas la première incision verticale exécutée le long du sommet de la crête (1er temps), mais simplement les deux incisions latérales qui ont pour objet de réaliser la résection elliptique de la fibro-muqueuse. Ce premier temps permet de repérer l'épaisseur des tissus de revêtement et par conséquent de réaliser l'ablation elliptique avec plus de précision sans y apporter de rectifications toujours difficiles en présence de tissus sans consistance.

Au maxillaire inférieur, lorsque la crête est très étroite, cette intervention n'est pas indiquée. Il suffit, dans ce cas, d'éliminer les tissus mous à l'aide de ciseaux à muqueuse.

L'ablation des tissus de revêtement au niveau des crêtes entraîne une diminution de leur hauteur et doit, par conséquent, être accompagnée fréquemment d'une extension vestibulaire.

2 — Correction au niveau du vestibule

L'ablation des tissus hyperplasiés, qui se développent dans le fond du vestibule, est une intervention simple. Les tissus à

réséquer sont saisis entre les mors d'une ou plusieurs pinces de Kocher et éliminés à l'aide des ciseaux à muqueuse. Il est important de prévenir toute récurrence en veillant à réaliser une exérèse complète.

Correction Osseuse

Alvéolectomie

Les corrections du procès alvéolaire sont généralement désignées sous le terme d'alvéolectomie. Comme le souligne le docteur Archer, ce terme signifie littéralement: ablation du procès alvéolaire dans sa totalité. (Mais il n'est pas question de réaliser une telle intervention). Il a été admis pour représenter les ablations de la table externe d'une ou plusieurs alvéoles au cours des extractions dites "chirurgicales" et les différencier ainsi des extractions simples, qui ne représentent sans doute pas un acte chirurgical. . . La régularisation des crêtes osseuses à la suite des extractions multiples possède encore la même appellation. C'est pourquoi, dans la mesure où il représente les interventions intéressant le procès alvéolaire et non une intervention déterminée, le terme "alvéolectomie" conserve toute sa valeur.

Régularisation des crêtes osseuses

La régularisation des crêtes osseuses a été longtemps considérée comme un temps opératoire des extractions multiples. Sans doute est-il nécessaire d'éliminer immédiatement un fragment de table fracturé et mobile, et de supprimer à l'aide de la lime à os les saillies trop marquées ou de prévenir les alvéolites par excision des septa interradiculaires trop étroits ou proéminents, mais cette régularisation doit être prudente et très limitée. Les parois de l'alvéole sont en effet minces et fragiles et le désir de supprimer tous les angles aigus entraîne un délabrement définitif qui n'a d'autre effet que d'accélérer le processus de résorption. La régularisation proprement dite du procès alvéolaire représente plutôt une intervention chirurgicale bien définie que l'on a avantage à exécuter

trois semaines à un mois après les dernières avulsions ou beaucoup plus tard avant de réaliser une nouvelle pièce de prothèse. Il est plus facile de se montrer conservateur lorsque l'alvéole est comblée et organisée et alors de supprimer seulement les saillies et les pointes osseuses susceptibles de blesser la muqueuse sous la pression de la pièce.

1er temps:

Incision, avec la lame no 15, en suivant le bord alvéolaire plutôt du côté vestibulaire, un cm. au-delà de la zone d'intervention, puis obliquement à 45° vers le vestibule sur un cm.

2e temps:

Décollement de la fibro-muqueuse et du périoste avec les extrémités mousse et tranchante de la rugine (periostal elevator) en ayant soin de ne pas déchirer le lambeau vestibulaire plus fragile. Ce dernier peut être maintenu à l'aide d'un fil de soie tenu entre les mors d'une pince hémostatique.

3e temps:

Exérèse osseuse avec la pince gouge (rongeur) lorsque les saillies sont importantes et régularisation avec la lime à os.

4e temps:

Régularisation du lambeau vestibulaire et suture.

Remarque:

La régularisation de la crête osseuse entraîne fréquemment une diminution de la hauteur du procès alvéolaire. Aussi, comme le souligne le Dr Gérard Maurel, l'incision et la régularisation du lambeau seront exécutées de préférence du côté vestibulaire, afin de conserver dans son intégrité l'épaisseur de la fibro-muqueuse au niveau du bord alvéolaire et éviter ainsi une diminution complémentaire de la hauteur de la crête. Au cours de l'étude des corrections osseuses dans le sens vertical, nous soulignerons au contraire la nécessité de recouvrir le sommet de la crête à l'aide du lambeau vestibulaire, pour ne pas aller à l'encontre de la réduction apportée à la hauteur des crêtes.

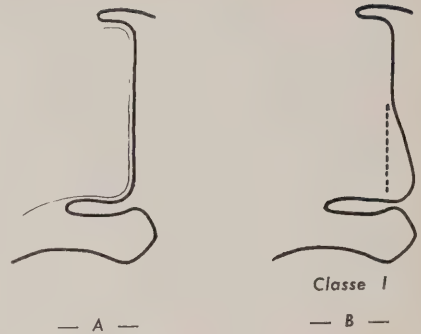


FIGURE 4
(Sens Vertical)

Correction des malformations au maxillaire supérieur

Les malformations congénitales ou acquises du maxillaire supérieur peuvent être représentées dans les plans frontal et sagittal, et les corrections à effectuer seront étudiées suivant trois sens différents:

- sens vertical
- sens sagittal
- sens transversal

1 — *Sens vertical*

Pour construire la maquette supérieure nécessaire à la prise d'occlusion, deux guides sont utilisés: le plan de Camper et le bord libre de la lèvre supérieure. Ceux-ci permettent d'établir avec précision l'importance de la correction à apporter. Cette correction a pour but de créer une hauteur d'occlusion suffisante pour permettre la construction de la prothèse.

Le plan tangent au bord alvéolaire (plan a, fig. 4, A) doit être sensiblement parallèle au plan de Camper et distant de 6 cm. au moins du bord libre de la lèvre supérieure (plan b, fig. 4, A).

Classification des Déformations Verticales

CLASSE I: comprend les déformations du procès alvéolaire dans sa partie antérieure (Fig. 4, B).

Il ne faut pas confondre résorption au niveau de la tubérosité et hyperalvéolisme antérieur. Le plan b (Fig. 4, A) ou plan de la lèvre, permet d'établir le diagnostic. L'hyperalvéolisme antérieur est évidemment très variable et son importance, du point de vue opératoire, est fonction de la longueur de la lèvre.

1er temps:

Incision, avec la lame no 15, au milieu de la crête, de prémolaire à prémolaire, un cm. au-delà du segment à réséquer, puis obliquement à 45° vers le vestibule sur un cm. (Fig. 9, haut gauche).

2e temps:

Décollement du lambeau vestibulaire en ayant soin de soulever dans le même temps le périoste. Puis procéder de la même façon du côté palatin.

3e temps:

Réséction avec la pince gouge (rongeur) si le rebord alvéolaire n'est pas trop épais; sinon utiliser ciseau et maillet. Dans le plan frontal, se guider par la ligne bipupillaire. Terminer avec la lime à os.

4e temps:

Replacer les lambeaux vestibulaire et palatin et supprimer l'excès de tissu de revêtement avec les ciseaux à muqueuse

au dépens principalement du côté palatin de façon à ce que le lambeau vestibulaire, plus mince, recouvre le sommet de la crête. Suturer au fil de soie.

Remarque:

L'orifice du canal naso-palatin se trouve fréquemment dans le champ opératoire. Il peut être nécessaire d'effondrer sa paroi antérieure.

On serait tenté de penser qu'en diminuant la hauteur du procès alvéolaire dans sa partie antérieure, on diminue dans le même temps la profondeur du vestibule.

La profondeur du sillon vestibulaire, de part et d'autre du frein de la lèvre supérieure, représente pour le prothésiste une constante. Celle-ci, mesurée depuis le plan prothétique (occlusal) est de 22 mm. Donc, par rapport au plan de la lèvre (plan b, fig. 4, A) la profondeur du vestibule est d'environ 20 mm. Aussi, en diminuant la hauteur du procès alvéolaire pour obtenir une distance d'au moins 6 mm. entre la crête et le plan de la lèvre, la profondeur du vestibule est encore de $20-6=14$ mm.

Ceci reste une moyenne et il peut être nécessaire en cas de lèvre courte de réaliser une extension chirurgicale du vestibule et une ablation du frein de la lèvre.

CLASSE II: comprend les déformations du procès alvéolaire dans sa partie postérieure (Fig. 4, C).

Il ne faut pas confondre résorption du procès antérieur et hyperalvéolisme de la tubérosité. La résorption importante du procès antérieur est toutefois assez rare. Le plan de la lèvre permet encore d'établir le diagnostic.

L'hyperalvéolisme au niveau de la tubérosité peut être symétrique ou asymétrique. Dans le cas de symétrie, l'intervention est identique des deux côtés.

Contre-indication importante:

Sinus procident. Ne jamais intervenir sans examen radiographique.

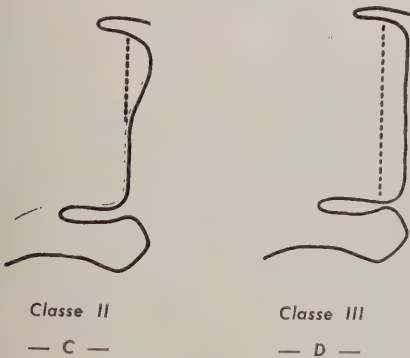


FIGURE 4
(Sens Vertical)

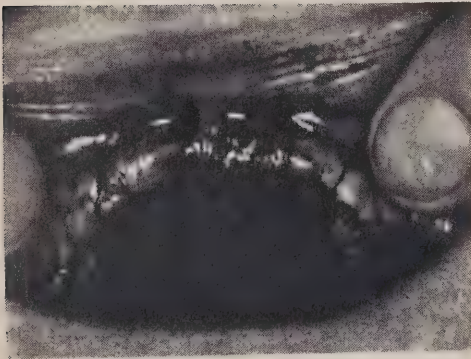
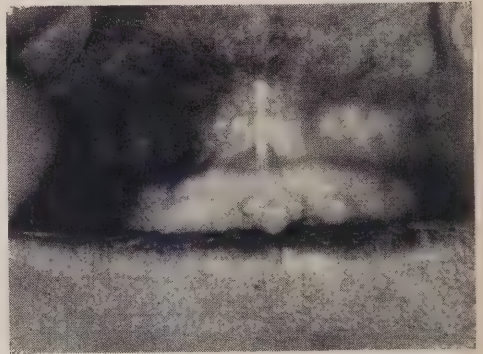


Hyperalvéolisme antérieur
Prothèse dépourvue du joint
périphérique.

FIGURE 5

Aspect du procès alvéolaire avant
l'intervention.

FIGURE 6



Alvéolectomie et ablation du
frein labial.

FIGURE 7

Aspect du procès alvéolaire après
la réduction.

FIGURE 8



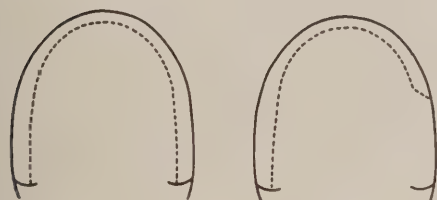


FIGURE 9

1er temps:

Incision, avec la lame no 12. Appliquer la pointe recourbée du scalpel dans le fond du sillon ptérygo-maxillaire et ramener la lame antérieurement vers le sommet de la crête. Utiliser alors la lame no 15 pour porter l'incision un cm. au-delà de la zone à réséquer. Puis prolonger l'incision obliquement vers le vestibule à 45° sur un cm. (on aura intérêt à exécuter l'incision postéro-antérieure sur le bord palatin du rebord alvéolaire) (Fig. 9, haut droit).

2e temps:

Décoller le lambeau vestibulaire sur toute la hauteur du procès alvéolaire. Décoller ensuite le lambeau palatin sur quelques mm. seulement.

3e temps:

Exérèse osseuse avec ciseau et maillet, si la paroi inférieure du sinus est suffisamment haute, sinon utiliser la meule à os. Terminer avec la lime à os.

4e temps:

Replacer le lambeau vestibulaire et supprimer l'excès de tissu mou avec les ciseaux à muqueuse de façon à ce que les deux lambeaux s'affrontent. Suturer.

CLASSE III: comprend les déformations

du procès alvéolaire antérieurement et postérieurement. Ces déformations peuvent être symétriques ou asymétriques (Fig. 4, D).

Contre-indication: La résection osseuse au niveau de la tubérosité est contre-indiquée en cas de sinus procident.

Premier temps

L'incision avec la lame no 12 a pour point de départ le fond du sillon ptérygo-maxillaire, comme précédemment. Elle est ensuite portée en avant avec la lame no 15 au milieu de la crête, jusqu'à la ligne médiane. Procéder de la même façon du côté opposé (Fig. 9, bas gauche).

En cas de déformation asymétrique, l'incision est portée un cm. au-delà de la zone à réséquer et dirigée obliquement en arrière vers le vestibule sur un cm. (Fig. 9, bas droit).

2e temps:

Décollement. Procéder comme pour les classes I et II.

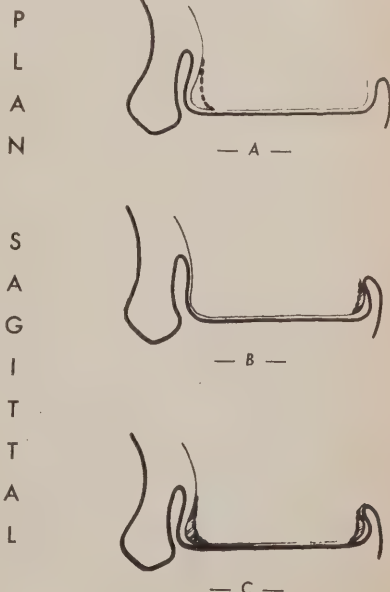


FIGURE 10

3e temps:

Exérèse osseuse. Se guider antérieurement par la ligne bipupillaire.

4e temps:

Régularisation des lambeaux et suture comme précédemment.

2 — *Sens sagittal*

Les déformations du maxillaire supérieur étudiées dans le sens sagittal sont souvent associées à des déformations verticales. Mais leurs conséquences n'étant plus en rapport avec la hauteur d'occlusion, il est plus facile de les étudier séparément.

CLASSE I: comprend comme dans le chapitre précédent, les déformations du procès alvéolaire dans sa partie antérieure (Fig. 10, A).

La déformation est représentée par la projection en avant du procès alvéolaire. Celle-ci est souvent accompagnée d'hyperalvéolisme et l'intervention est sensiblement identique à celle de la CLASSE I, sens vertical. La projection antérieure intéresse l'esthétique; aussi l'intervention a-t-elle un double but: corriger le prognathisme supérieur et permettre à la prothèse d'envelopper la totalité du procès alvéolaire. Le joint périphérique peut alors être établi normalement dans le fond du sillon vestibulaire. Il faut néanmoins se montrer conservateur et ne pas éliminer toute rétention en rendant le procès alvéolaire "de dépouille".

CLASSE II: comprend les déformations

du procès alvéolaire dans sa partie postérieure (Fig. 10, B).

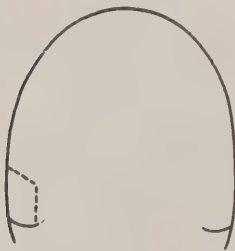
La portion postérieure du procès alvéolaire surplombe fréquemment le sillon ptérygo-maxillaire et constitue ainsi une rétention (undercut) importante. Cette rétention ne permet pas au bord postérieur de la prothèse d'envelopper la tubérosité et de combler le sillon ptérygo-maxillaire.

Néanmoins, lorsque cette déformation n'est pas trop accentuée, elle constitue une rétention pour la prothèse. Aussi l'intervention doit-elle être économique. Comme précédemment, elle peut être symétrique ou asymétrique.

Le point de départ de l'incision se trouve encore situé dans le fond du sillon ptérygo-maxillaire. On utilise la lame no 12, en la remontant antérieurement sur un cm. et cette première incision est ensuite prolongée à 45° vers le vestibule, comme s'il s'agissait de réaliser l'avulsion d'une dent de sagesse incluse. L'exérèse osseuse est réalisée à l'aide de la lime à os (Fig. 11, A).

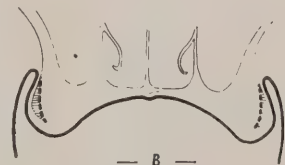
CLASSE III: comprend les déformations du procès alvéolaire des classes I et II. Il y a symétrie ou asymétrie suivant que la rétention postérieure est bilatérale ou unilatérale (Fig. 10, C).

L'impossibilité d'appareillage est encore plus évidente; mais si les rétentions antérieure et postérieure ne sont pas très importantes, il est préférable de n'intervenir que sur l'une d'elle seulement. On choisit dans ce cas l'exérèse antérieure,



— A —

FIGURE 11



— B —

FIGURE 11

(sens transversal)

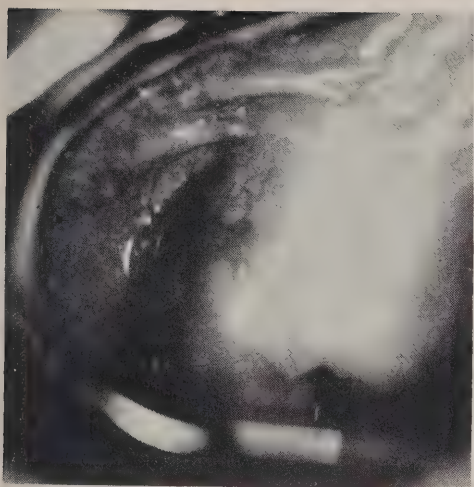


FIGURE 12

car les rétentions postérieures sont beaucoup plus précieuses pour la tenue de la prothèse complète.

3 — Sens transversal

Les malformations du procès alvéolaire, que l'on peut examiner dans le sens transversal, appartiennent à la classe II et siègent principalement au niveau des tubérosités. Il s'agit des surplombs vestibulaires qui créent une rétention très favorable à la prothèse, lorsqu'ils ne sont pas trop accentués. Si le surplomb est unilatéral, il n'est pas indiqué d'intervenir. Au contraire, l'intervention peut être indispensable en cas de symétrie. L'exérèse osseuse est conseillée d'un côté seulement (Fig. 11, B). L'incision, avec la lame 12, a pour point de départ le fond du sillon ptérygo-maxillaire; elle est prolongée antérieurement avec la lame no 15 en suivant le bord alvéolaire un cm. au-delà de la zone rétentive et portée à 45° vers le vestibule sur toute la hauteur du procès alvéolaire. L'exérèse osseuse est réalisée à l'aide de la lime à os.

Remarque

Les déformations du maxillaire supérieur provoquées par les ostéites fibreuses

peuvent dans certains cas être corrigées partiellement afin de permettre la restauration prothétique.

Observation: (Fig. 12 et 13).

Un homme, âgé de 45 ans, a été envoyé par son dentiste à la consultation du Service de Chirurgie pour une déformation siégeant au maxillaire supérieur, du côté droit; la hauteur d'occlusion étant insuffisante pour permettre l'établissement d'une prothèse.

Le malade raconte, sans certitude, que cette déformation apparût vers l'âge de 12 ans et que son accroissement fut depuis lors insensible. Par ailleurs, aucun signe fonctionnel ne peut être relevé. Le frère du malade est atteint de Paget.

L'examen révèle une tuméfaction siégeant principalement au niveau de la tubérosité du maxillaire droit, s'étendant antérieurement jusqu'au niveau de la canine. La coloration des tissus de revêtement est normale. On peut souligner toutefois la présence de varicosités capillaires. La palpation confirme l'absence de douleur et une consistance ferme osseuse de la déformation avec par plages assez bien circonscrites des zones légèrement dépressives dans le fond du vestibule. L'état général est excellent. L'examen radiographique révèle une image caractéristique avec un aspect nuageux et diffus du maxillaire supérieur droit.

Le malade fut opéré et la déformation

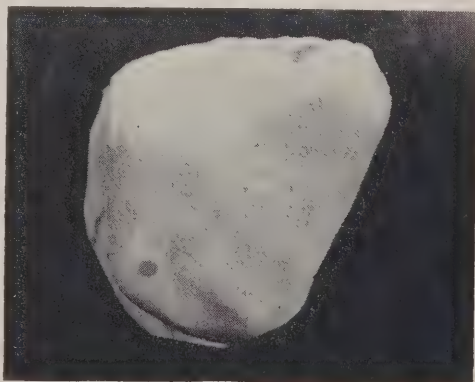


FIGURE 13

corrigée. La biopsie apporta la confirmation du diagnostic: ostéite fibreuse.

Corrections des Malformations au Maxillaire Inférieur

Au maxillaire inférieur, les malformations du procès alvéolaire sont moins fréquentes et leur importance est bien moindre. Aussi n'est-il pas nécessaire d'appliquer ici la classification précédente. Nous étudierons seulement: les crêtes aigues, les surplombs antérieurs et les tori mandibularis.

Crêtes Aigues

Le procès alvéolaire antérieur de la mandibule présente fréquemment une crête aigue et mince, régulière comme une lame de rasoir ou rugueuse en dents de scie. Cette transformation de la crête à ce niveau pourrait sembler être une adaptation physiologique du procès alvéolaire dans sa fonction incisive. Le malade supporte difficilement sa prothèse, car la pression de celle-ci sur les tissus de revêtement cause une irritation constante qu'il attribue à la mauvaise adaptation de la plaque. Il fait construire de nouvelles prothèses dans l'espoir d'obtenir satisfaction.

Seule, la correction chirurgicale peut palier à cette malformation. L'examen révèle un bord alvéolaire arrondi et normal, mais la palpation s'avère douloureuse. L'intervention corrective est identique à celle décrite pour les corrections d'irrégularités. La prothèse est mise en place immédiatement après l'intervention et garnie de ciment chirurgical.

Surplombs Antérieurs

Avant de procéder à l'avulsion du groupe incisivo canin, on remarque parfois une déformation du procès alvéolaire dans sa partie supérieure et antérieure et l'existence d'un véritable surplomb à ce niveau. On est tenté de réaliser la correction au moment des extractions, mais ceci entraînerait la suppression de la table externe et il ne subsisterait qu'une crête mince et facilement résorbable correspon-

dant à la table interne. Il est préférable de n'intervenir qu'un mois après les extractions, car la résorption a modifié alors l'importance du surplomb et la correction est beaucoup moins délabrante.

Premier temps

Incision, avec la lame no 15, en suivant le bord alvéolaire un cm. au-delà de la zone d'intervention, prolongée à chaque extrémité à 45° vers le fond du vestibule.

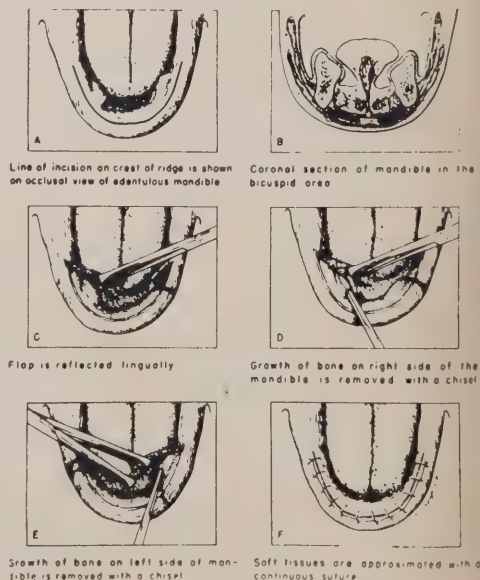
Deuxième temps

Décollement de la muqueuse et du périoste sous-jacent le long de la face antérieure du procès alvéolaire avec le bord tranchant de la rugine en ayant soin de ne pas déchirer la muqueuse, très fragile à ce niveau.

Troisième temps

Exérèse du surplomb avec la lime à os passée verticalement de bas en haut. Les particules osseuses retenues sur la lime sont aspirées après chaque passage de celle-ci.

FIGURE 14



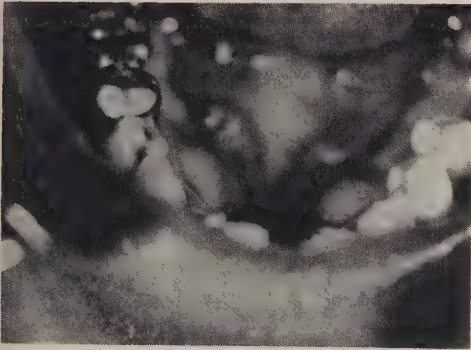


FIGURE 15

Quatrième temps

Régularisation du lambeau vestibulaire et suture.

Tori Mandibularis

Sur la face linguale du procès alvéolaire, ces exostoses se développent au niveau canin et prémolaire. Elles sont bilatérales et de forme nodulaire. Au nombre de deux ou trois, ces nodules sont soudés entre eux et leur taille peut être variable (pois ou noisette). Ces exostoses sont formées de tissu compact et on ne rencontre de tissu spongieux que dans les formes très développées.

L'ablation chirurgicale est nécessaire pour réaliser l'adaptation de la prothèse complète inférieure. La figure 14 résume les différents temps opératoires de cette intervention.

Acquisition de la bibliothèque

AMERICAN DENTAL ASSOCIATION. COUNCIL ON DENTAL THERAPEUTICS: **Accepted dental remedies**. 23e éd. 1958. 214 p.

DAVIDSON, H. A.: Guide to medical writing; a practical manual for physicians, dentists, nurses, pharmacists. 1957. 338 p. illus.

FOLDES, F. F.: Muscle relaxants in anesthesiology. 1957. 210 p. illus.

MARMASSE, A.: Dentisterie opératoire. Tome 2. Dentisterie restauratrice. 1958. 556 p. illus.

TURNER, C. E., SELLERY, M., and SMITH, S. L.: School health education. 3e éd. 1957. 466 p. illus.

WALSH, J. P.: A manual of stomatology. 1957. 130 p. illus.

THE YEARBOOK OF DENTISTRY 1956-57: Chicago, Year Book Publishers, 1957. 480 p. illus.

Relevé sur l'économie de l'exercice dentaire en 1958

L'Association dentaire canadienne se propose de faire un relevé sur l'économie de l'exercice dentaire en 1958. On fera parvenir à tous les membres, au début de 1959, un questionnaire auquel ils devront répondre confidentiellement. Les renseignements ainsi obtenus serviront d'une manière précieuse à l'élaboration des services dentaires de l'avenir.

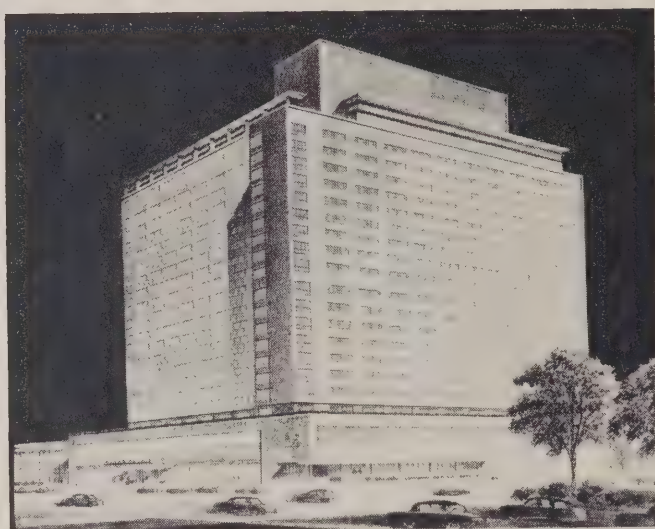
On a demandé à l'Association d'avertir ses membres à l'avance pour que ceux-ci puissent commencer à compiler les renseignements nécessaires. Le questionnaire demandera, entre autres, des chiffres au sujet du nombre des patients traités durant l'année et du nombre de séances consacrées à chacun d'eux.

Le questionnaire de 1958 sera à peu près le même que celui de 1953, pour que des comparaisons puissent s'établir plus facilement.

Congrès de l'Association dentaire canadienne à Montréal

les 26, 27, 28 et 29 octobre 1958

à l'Hôtel Reine Elizabeth



Programme d'ensemble

dimanche, le 26

Inscription
Golf (si la température le permet)
Concert

lundi, le 27

a.m. Inscription
Exposition scientifique
Exposition commerciale
Cliniques de table
Ouverture officielle de l'exposition artistique

p.m. Dîner de l'Association dentaire canadienne
Réunion générale de l'Association dentaire canadienne
Conférence du Mémorial Grieve
Enquête-éclair, genre Gallup
Réception officielle

mardi, le 28

- a.m. Inscription
Exposition scientifique
Exposition commerciale
Exposition artistique
Conférence sous les auspices de la Société Canadienne de Dentisterie pour enfants
Conférence sous les auspices de la Société Canadienne de Chirurgie buccale
- p.m. Déjeuner
Conférences
Réunions de conventum

mercredi, le 29

- a.m. Inscription
Exposition scientifique
Exposition commerciale
Exposition artistique
Cliniques répétées
- p.m. Déjeuner
Conférences
Dépouillement des réponses à l'enquête-éclair, genre Gallup
Dîner et danse du Président

Témoignage

Le Comité d'organisation du Congrès de 1958 désire exprimer à l'Association dentaire de la Province de Québec sa profonde gratitude parce qu'elle a décidé cette année d'unir ses activités annuelles à celles du Congrès national.

Salon d'art

Les dentistes du Canada, les membres de leur famille et leur personnel auxiliaire sont cordialement invités à soumettre à l'exposition leurs travaux artistiques, tels que: peintures, sculptures, photographies, travaux d'artisanat, etc. Des détails plus complets seront annoncés bientôt.

Traduction simultanée

Pour la première fois à un Congrès de l'Association dentaire canadienne, toutes les communications présentées en assemblée générale seront traduites en français ou en anglais, selon le cas.

Le travail de cette traduction simultanée a été confié à des spécialistes en ce domaine.

Inscription au Congrès

L'inscription au Congrès donne droit à toutes les réceptions, les déjeuners, le dîner et la danse du Président et à toutes les activités scientifiques, artistiques et commerciales.

Nouvelles de l'Association

Plan d'Epargne-Pension de l'Association dentaire canadienne

Comme tous les membres le savent, l'Association a mis sur pied un plan d'Epargne-Pension par lequel tous ceux qui y participent peuvent, avec l'autorisation du Ministère du Revenu national, déduire de leur revenu imposable les sommes qu'ils consacrent à ce plan, lorsqu'ils font leur rapport d'impôt sur le revenu.

Plusieurs dentistes ont déjà profité de ce plan afin d'abaisser leur impôt pour 1957 et on espère que, dans un avenir prochain, plusieurs autres feront de même. Un certain nombre de membres ont peut-être hésité jusqu'à maintenant à prendre avantage de ce plan parce qu'ils ne le comprenait pas bien ou que, dans leur esprit, il y avait quelques détails d'apparence obscure.

Le petit fascicule publié par l'Association dentaire a pour but d'éclairer la plupart des clauses douteuses, mais il est peut-être bon ici de clarifier certains points qui sont le plus souvent soulevés.

1) Remboursement des primes

Le plan d'Epargne-pension de l'A.D.C. n'impose aucune restriction sur le remboursement des primes, à condition de ne pas violer les règlements du gouvernement à ce sujet. Le Ministère du Revenu national n'accepte officiellement que les plans de retraite, individuels ou collectifs, qui ne permettent pas à leurs assurés de retirer des bénéfices autres que des rentes. De même, la loi prévoit que les remboursements deviennent sujets à l'impôt, mais le Ministère ne semble pas défendre ces remboursements. Ainsi, un membre du plan d'Epargne-Pension de l'A.D.C. peut, en aucun temps, cesser de faire partie du plan et recouvrer ses versements sans autre pénalité que celle fixée par les règlements fédéraux, tant que le gouvernement ne s'y objectera pas.

2) Aucune obligation de continuer

L'adhésion au plan n'impose pas l'obligation de verser des primes chaque année. On peut passer par dessus n'importe quelle

année et reprendre quand on le désire. Cependant, au cours d'une année où on désire payer sa prime, ce versement pour la dite année, ne doit pas être inférieur à \$200.00.

3) Achat de rentes

Il n'y a aucune restriction au sujet du nombre minimum d'années où le souscripteur doit verser des primes; de même, il n'y a pas d'âge fixé à l'avance où les rentes commencent à être payées. Le souscripteur décide de ces questions plus tard, mais la somme qu'il a amassé à son crédit dans le plan doit être utilisée pour l'achat d'une rente, avant qu'il n'ait atteint l'âge de 71 ans.

On peut choisir soi-même le genre d'achat de rente et une partie ou la totalité du montant amassé par les primes peut servir à acheter une rente du gouvernement. On est mis au courant des diverses façons de procéder, mais la décision finale appartient au souscripteur.

4) Dépenses

On ne voit nulle part dans le texte de la loi une mention à l'effet qu'un plan individuel de retraite officiellement approuvé puisse permettre une déduction plus considérable à l'item des dépenses. Dans le plan d'épargne-pension de l'A.D.C., le seul montant qui doit être chargé au fonds général équivaut à un huitième de 1% de la valeur au marché de ce fonds, à la date de son évaluation trimestrielle. C'est là la seule déduction faite aux primes ou aux intérêts qu'elles rapportent.

En clarifiant ces détails, l'Association croit qu'un plus grand nombre de dentistes se prévaudront des privilèges d'impôt qu'offrent des versements à un fonds de retraite. Il est maintenant trop tard pour profiter de ces avantages pour 1957, mais l'Association recommande, à ceux qui n'ont pas encore rempli leur formule de demande, de le faire au plus tôt pour commencer les versements qui pourront compter pour 1958. Si on n'a plus de formule, on peut en obtenir une autre en s'adressant au

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OF THE CANADIAN DENTAL ASSOCIATION

Progress in Canadian Dentistry

A. GERALD RACEY, D.D.S., F.A.C.D., F.I.C.D.*, Montreal, Quebec

The startling events which have occurred in the scientific world in the past few months have, I am sure, left a profound impression on all of us. To me it has produced a deep consciousness of the awe-inspiring age in which I happen to live. Within the comparatively short period of forty-five years we have experienced achievements in scientific progress which are unparalleled in the history of mankind. During this period we have also experienced two world wars with an intermediate period of economic depression. The aftermath and the implications of these events have brought with them radical alteration in the philosophies as well as

widespread social and economic changes. With these changes have come increased problems and responsibilities which we must accept and to which we must adapt ourselves. We, as professional men, must have an appreciation of the times in which we live. This is an age of considerable wealth in our country enabling the progress and development of the professions as never before. In social and economic affairs there is an apparent tendency to collective action and professional men, as well as others, are affected by

* President. Canadian Dental Association.

it. Collective control of certain aspects of our life has been present throughout the history of our country and gradually, one by one, further aspects are being placed under such control. Up to the present the results have been a mixed economy with considerable emphasis on individual initiative and freedom of action. But what of the future? The direction and extent to which collective action may go should be the deep concern of all professional men.

As a citizen, the professional man has a definite responsibility, for he is a person selected and certified for an important and particular service. In other words, he has been granted a privilege. With this privilege go responsibilities and obligations which are more demanding today than in times past. Great advances in techniques and methods have led to broader services by the professions and have upheld the public trust, but have not made our responsibilities any less; rather they have increased the rights and expectations of the public to professional service.

How well the public is being served cannot be measured alone by advancements in technical skills but rather by our proficiency in social science and its related subjects. Human and public relations, of the correct sort, cannot be initiated and made grow at headquarters in Toronto nor at provincial or local levels, but must be an individual concern. What we as individuals do to help in solving social and civic problems, as well as our professional proficiency, is the basis upon which we must be judged.

Let us now consider the most immediate and pressing responsibility which faces us—that is, the method by which we are going to meet the need for increased personnel, now, and in the future; and, at the same time, maintain and improve the quality of our service. From information supplied by surveys and statistics it is clearly shown that 98% of the population of our country suffer from dental disease and that only 35% receive any form of treatment during any one year. The outstanding reason for this situation

is that there has been a great increase in population without any significant increase in dentist population. In fact, the ratio is becoming worse each year. The indicated ratio for this year is approximately one dentist per 3,000 population.

It immediately becomes evident that if we are to meet these expanding needs we must at once begin the expansion of our facilities for dental education. Here we face a most complex problem. As it stands today our dental faculties are able to graduate just barely sufficient dentists to cover the loss to the profession by death and retirement. I am glad to say, however, that some improvement in this matter can be expected within the next few years for it is particularly gratifying to note that the University of Manitoba has established a new dental school, to open in 1958 with a probable yearly enrolment of thirty students. The University of Toronto is to have a new dental school with the yearly enrolment increased to one hundred and twenty-five and Dalhousie University, with a fine new building, is increasing its enrolment to twenty-five per year. Although this offers some encouragement it is by no means a complete solution.

With an increase in accommodations we are faced with the increased need of securing qualified teachers for the new or enlarged schools. Methods of imparting knowledge to students in our dental schools have, unfortunately, not shown as great progress as we could wish for. Although competent professional people are, and have been, available, in most cases they are anything but highly qualified, pedagogically speaking.

The 1948 report of the Committee on Education of the American Dental Association conveys this thought in most adequate manner: "The immediate future therefore, demands dental teachers who are not only well educated in the biologic sciences and skillful in the techniques but also who are possessed of broad knowledge in the social sciences and in teaching methods. A goodly number of such dental teachers are necessary if dentistry is to meet the challenge of the day, and of the

near future, with the success that will preserve, for us, and for the public, many of the principles of health care which we hold dear, and essential, to democratic life. We should immediately set ourselves to the task of preparing an adequate number of superiorly educated and trained dental teachers . . ."

The Macdonald Report, prepared for the University of British Columbia is considered one of the most complete and searching analyses of dental education presently available. "The new Faculty will have to compete with the best schools for the kind of teachers it will need. It will have to provide adequate salaries and opportunities for professional advancement and scientific inquiry. Even meeting these requirements it may well be necessary for the faculty to conduct a program of teacher training to develop suitable staff."

Being fully aware of this need the Council on Dental Education of your Canadian Dental Association organized, with the financial assistance of the Kellogg Foundation, a series of conferences to improve teaching methods. Since 1955, four of these conferences have been completed. These have been most successful and we believe that this programme will have far reaching effects on dental education in Canada.

Student recruitment poses another important problem. Here, and this also applies in the case of teaching personnel, *attitude*, as well as *aptitude* must be carefully considered. Of these, attitude is, we believe, the more important factor. Great changes in attitudes and concepts of dental practice have occurred during the past fifty years, and with these changes have come added responsibilities. Treatment for relief of pain and the replacement of teeth was the main function of dentists in the early days. Since that time through a greater knowledge of the biological sciences and through research, the "control" of dental disease has become our most important service. From control the next phase is that of *prevention*.

Periodontal diseases and dental caries are our main concern in the field of oral

pathology. Research has been accelerated considerably in the field of periodontal diseases but unfortunately little headway has been made — control of local types such as gingivitis and marginal periodontitis has been more or less accomplished; however, in the types with an associated systemic background some very elusive causative factors have yet to be recognized. The story of dental caries is quite different. With early recognition and treatment we have reached the phase of control and are rapidly approaching the phase of prevention.

With these changes from earlier days must come changes in attitudes and responsibilities. The attitude of the ideal dentist should be a positive one of dedication and service. It should include an appreciation and awareness of one's fellows, one's patients and one's colleagues, with a generous attitude standing paramount.

We have considerable competition in the field of student recruitment today. Business and industry are using many and varied methods to induce our young people to consider careers in other fields, especially engineering with its many scientific facets. This situation will no doubt be aggravated by the events which have just recently occurred in the scientific world and of which I spoke earlier. Not only will we have great competition from industry and commerce but by government also, for it is highly probable that very soon greater pressures will be exerted for the encouragement and training of larger numbers of available manpower in the scientific fields such as aerodynamics, nuclear research and other allied subjects.

The financial aspect of student recruitment must also be considered. Financial assistance offered through fellowships and bursaries as an inducement for exceptional scholarship by students of dentistry leaves much to be desired as compared with other fields and other professions.

In the contemplation of possible state control of health services we may anticipate a further deterrent to the recruit-

ment of a suitable type of professional potential. The attraction that brings new manpower of a desirable sort to the health professions is to be found in the satisfaction that comes from independent ownership and personal control of the ministrations to human needs. With the loss of incentive to individualism we can contemplate a loss of interest of desirable professional types.

In exploring further means of serving greater numbers of the public an increase in the use of auxiliary personnel must be seriously considered. Here we must proceed cautiously to make certain that such personnel is properly qualified to render a preventive service in a specific field of action.

The role of dental nurse or assistant, as well as that of the accepted dental technician, is pretty well established in performing a desirable ancillary service. On the other hand, the introduction of the oral hygienist has a great promise of relieving the dentist of a great quantity of time-consuming treatment, allowing him to serve a correspondingly greater number of patients. From statistics it has been shown that trained hygienists save the dentist about 40% of his time. At present we have only one school in this country training a small number of dental hygienists. Here again our problem is one of insufficient teaching facilities.

The brightest spot on the horizon, which, we are assured, will reduce the need for dental service in the future, is, of course, the procedure of adjusting the fluoride concentration of public water supplies to a ratio of one part fluoride to one million parts of water. I do not intend to go into detail regarding this matter as I am sure everyone is quite familiar with the procedure, however, I would like to summarize those benefits which are factual. The fluoridation procedure has received diligent study under the widest variety of controlled conditions during a period of over thirty years and these studies reveal that fluoride, in the recommended amount, is safe from any deleterious effects and is dramatically effective

in reducing dental caries by approximately 65%, and further, these benefits continue from childhood into adult life. Here we have a *practical* and *positive* approach to the solution of one of the most widespread public health problems of our age. In spite of intensive opposition by a small minority of the public the introduction of fluoridation is making headway and almost one million people in our country are now drinking fluoridated water. Our effort here must be one of continuing public education on the subject.

The foregoing is a vivid example of what can be accomplished by research. The story of dental research in our country is an interesting and, to my mind, an encouraging one. Twelve years ago less than \$5,000 was being spent on dental research; today the figure is in the vicinity of \$140,000. It was mainly through the efforts of your Association that in 1945 an Associate Committee on Dental Research was established by the National Research Council of Canada. (This is singly the most important organization supporting dental research in Canada.) The first difficulty this committee encountered was that there existed an inadequate number of adequately trained personnel to qualify for grants. To remedy this situation the Canadian Dental Association, through its Research Committee, established studentships for suitable candidates who wished to pursue a career in teaching and research. Since then, over \$35,000 has been provided to assist some twenty candidates to obtain training in a wide variety of basic science subjects. This arrangement has proven very successful. I would like to quote here from a recent report of the Chairman of the Committee on Dental Research—"In spite of the most conscientious efforts of the dental profession and in spite of the application of the most ingenious treatment methods the prevalence of dental disease has not been reduced. As other diseases are eliminated or are markedly reduced by preventive methods the uncontrolled scourge of dental disease becomes proportionately more obvious. There is a

great need for preventive methods and research".

Only by the use of a broader perspective of investigation and interest can we hope to understand the cause of oral disease. We must educate ourselves as well as the public in this outlook. We need a greater public interest if we are to succeed in attracting the funds necessary for the proper execution of any program of dental research.

The principles of policy as laid down by the committee on Dental Public Health of the Canadian Dental Association provide a comprehensive summary of what is felt to be a desirable program:

1. To encourage further dental research.
2. To encourage and assist in prevention;
 - (a) By intense and continuous health education throughout the community,

- (b) By the use of those preventive measures which can be provided through community organization, such as fluoridation,

- (c) By the use of those preventive services which can be rendered by the dental profession and its auxiliaries.

3. To encourage the early diagnosis and systematic treatment of those conditions which cannot be prevented in the light of present day scientific knowledge.

4. To encourage the establishment of adequate facilities for training of dentists and dental personnel and to seek their more effective utilization in health programs.

In conclusion may I say that the objective of every citizen should be, general community welfare, and we must take leadership on matters of health for which we are especially trained.

The Effects of the Retention of Roots Following Tooth Extraction

H. E. SIMPSON, M.D.S., Newcastle upon Tyne, England.*

INTRODUCTION

When a root is fractured during the extraction of a tooth, the operator is faced with the alternatives of removing it, sometimes at the cost of trauma and destruction of bone considerably in excess of the patient's expectations, or of leaving it in place and hoping that no ill effects ensue. If the remaining fragment is large and accessible there is little doubt as to the correct procedure, but if it is small and deeply placed there is often difficulty in deciding, especially if there is danger of involvement of the antrum or the inferior dental nerve.

THE EFFECTS OF PRE-EXISTING INFECTION

A distinction must be drawn between infected and uninfected roots. Most dentists are familiar with the embarrassing sequelae of the incomplete removal of an abscessed tooth; not only do the patient's symptoms persist but he suffers also from the trauma of the attempted removal, particularly if prolonged endeavours have been made to complete the operation. In such circumstances even when the original acute condition has subsided, chronic discomfort and acute exacerbations of the

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Uninfected palatal root of premolar 1 week after attempted extraction. (Macacus Rhesus Monkey).

remaining low grade inflammation are liable to follow. A chronic sinus opening into the mouth is common and occasionally one is seen on the face. There is also a risk of cyst formation resulting from stimulation of epithelial rests.

THE EFFECTS OF THE SIZE OF THE FRAGMENT

When a root fragment is infected its size is immaterial except insofar as a large projecting root may produce traumatic effects on the adjacent gum, tongue or cheeks. In the absence of pre-operative infection, however, size is a much more important factor. The surrounding tissues are basically able to deal with a large



FIGURE 2

Infected palatal root of premolar 1 week after attempted extraction. (Macacus Rhesus Monkey).

root fragment as easily as with a small one but larger fragments are more likely to project into the superficial part of the extraction wound. In this situation they are liable to become infected and to interfere mechanically with the closure of the surface tissues.

Small root remnants deep in the wound are generally well tolerated. The four specimens described below were obtained during investigations into the healing of extraction wounds in *Macacus Rhesus* monkeys.

Figure 1 shows the retained palatal root of a maxillary premolar one week after the attempted extraction. In spite of its size the blood clot has succeeded in covering it. The pulp has been preserved and has become continuous with the newly formed connective tissue at the mouth of the socket. A certain amount of osteoclasia along the cervical half of the palatal side of the socket indicates that the bone or the periodontal membrane has been damaged during the attempted extraction. Although the epithelium would probably have closed satisfactorily over the root, it is clear that very little alveolar resorption would be necessary to uncover it again.

Figure 2 shows a similar root also one week old left in position after the surgical removal of the buccal roots. The blood clot has failed to cover it or has broken down and the pulp chamber is exposed to the mouth. Its superficial part shows a mass of inflammatory cells beneath which the pulp is necrotic except for a small part at the apex not shown in the section. The root, projecting above the level of the organizing clot, would prevent the completion of the epithelial covering.

Figure 3 shows the apex of the distal root of a mandibular premolar two weeks after the extraction. This fragment is remote from the surface where the soft tissues have healed normally. The root is already submerged in new bone which also extends into the pulp chamber from which part of the pulp appears to have been avulsed. The apex has been partly

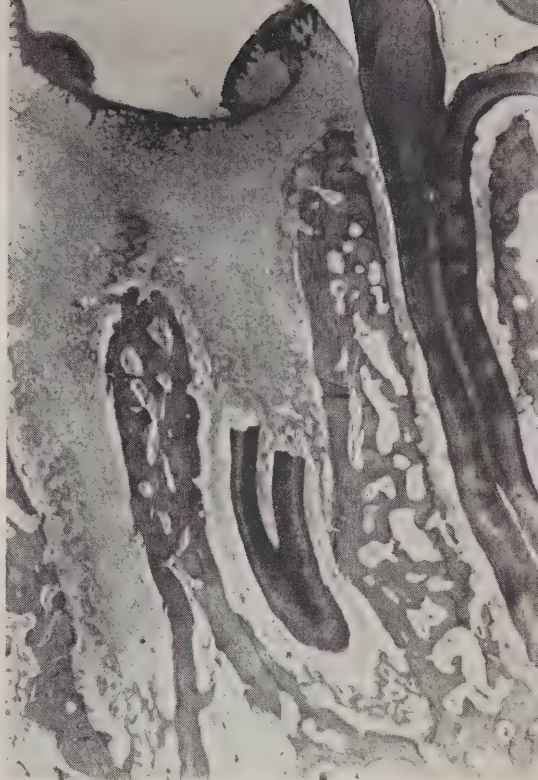


FIGURE 3

Apex of mandibular premolar 2 weeks after extraction of the tooth. (*Macacus Rhesus* Monkey).

withdrawn from the socket as is witnessed by the new bone forming at the socket base but further sections show that the remaining pulp tissue has remained vital and the apical vessels appear to be preserved although the periodontal membrane has become disorganized. Cementum is being deposited over the fractured root surface.

Figure 4 shows a root remaining in position four weeks after extraction. The pulp has remained vital but has undergone fibrous degeneration and a good deal of calcific material has been deposited on the walls of the pulp chamber. The broken surface is covered with a layer of cementum. Bone has grown partly over the root but appears to have been prevented from completely covering it by a small abscess which is situated near the socket mouth and is not connected with the root.

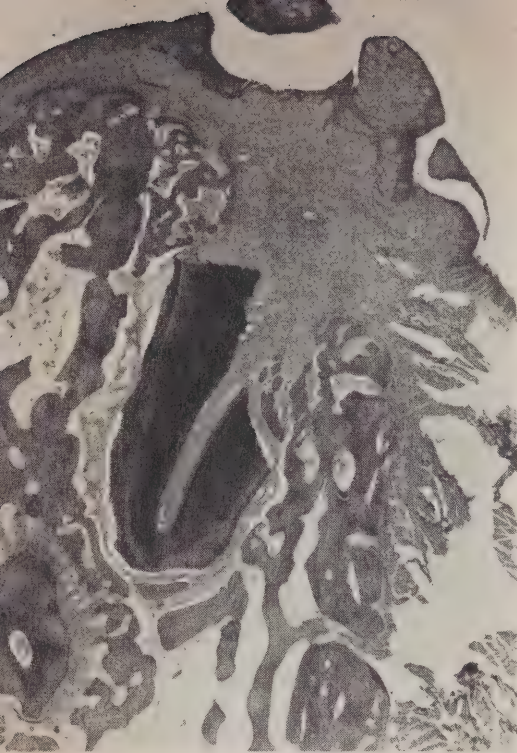


FIGURE 4

Mandibular lateral incisor root 4 weeks after attempted extraction. (Macacus Rhesus Monkey).

DISCUSSION AND CONCLUSIONS

Szabo (1928) investigating the healing of tooth sockets containing root remnants in dogs found that when the root was not a physical obstacle, healing progressed normally. Glickman et al. (1947) using rats in similar experiments also stated that proximity to the surface set up unfavourable complications. The specimens of root remnants in monkeys described here show similar effects.

Szabo considered that pulp remnants

assisted the healing process but specimen 3, where the greater part of the pulp appears to have been avulsed from the root, shows good healing progressing to ossification in the affected part of the pulp chamber.

In spite of the improved blood supply available, the pulp appears to undergo fibrous and calcific degeneration but this does not mean that it will become necrotic. Similar changes have been observed by the writer in the pulps of deeply placed human root remnants discovered radiographically and removed for prophylactic reasons.

The broken surface of the root acquires a layer of cementum and the remnant becomes a stable structure causing no reaction in the surrounding tissues.

The conclusions appear to be as follows:

(1) A large root fragment should be removed even if as in Figure 1 the pulp retains its vitality because it will undoubtedly be uncovered fairly rapidly by alveolar resorption if it is not already projecting above the level of the bone.

(2) Infected roots should be removed unless there are strong contra-indications to this procedure.

(3) Apical fragments of uninfected teeth lying deep in the bone and surrounded by normal tissues are probably harmless although they may be uncovered after many years by alveolar resorption.

REFERENCES:

- 1947 Glickman et al. *Am. J. Ortho. & Oral Surg. Sec. Oral Surg.* XXXIII: 263.
1928 Szabo, *J. Zeitschr. f. Stomatol.* XXVI, 669.

An Approach to Our Dental Health Problem*

C. W. B. McPHAIL, B.Sc., D.D.S., M.S.D.**

Only by a combined and deliberate effort can we hope to cope with the dental health problem. Here in British Columbia, as elsewhere, there has been an increasing awareness of the importance of dental health. However, until recent times there has been no *concerted* effort on the part of the various interested groups to undertake a solution to this problem.

It is now realized that it is not an individual responsibility but one that must be shared. Should public health share in this responsibility? To answer we must determine what constitutes a public health problem and in addition, what is the present day policy of public health.

It has been said, "that a health problem becomes one of public concern when, because of its nature and extent, its solution requires organized group action." Such action, if it falls within the scope of public health, will be directed towards not only a longer life but as well, a better life. Based upon the number of deaths directly attributable to dental disease, it could be argued that this disease is not a community or public health problem. However, when we consider that over 95 per cent of our population is afflicted with one form or other of dental disease, and knowing the undermining effect that such diseases can have upon the well-being of the individual, both physically and emotionally, as well as socially,¹ and at practically any period of life, we must surely agree that dental health is a public health problem. If, in addition, we consider the discomfort and suffering as well

as the economic factors involved,² it is then apparent that this problem is of sufficient size and severity to warrant not only our deep concern, but also our combined efforts to combat it. If we agree that preventive dentistry is a desirable feature of a public health service, we must not only endorse — we must act.

CONCEPT OF PREVENTION

When we note the prevailing high incidence of dental disease and the tremendous backlog of untreated disease³ plus the shortage of dental man-power,⁴ it is obvious that treatment, although a very important factor, is not, and cannot alone be our course of action. With dental disease, as it has been in the past with many other diseases, the public health approach lies in prevention. However, *unless people are sufficiently aware of, and concerned with,* the importance of dental health as it relates to general well-being, knowledge of prevention will not be generally sought; nor, even if known, will it be put into action. Therefore, our *first* objective, the chief weapon in prevention, must be an educational program designed to stress:

- (1) the important role that dental health plays in the welfare and general well-being of an individual throughout a life span;
- (2) the enormity of the problem as it exists;
- (3) the paradox of its solution. Each person must accept responsibility on an individual basis but there must also be acceptance of this responsibility at organized group levels. From a public health point of view, one cannot be successful without the other;
- (4) the fact that proven control measures do exist today that are applicable either on an individual or on a group basis.

* Presented at the annual British Columbia Public Health Service Institute held in Vancouver, British Columbia, April 1937. ** while Acting Director, Division of Preventive Dentistry, Health Branch, Government of British Columbia.

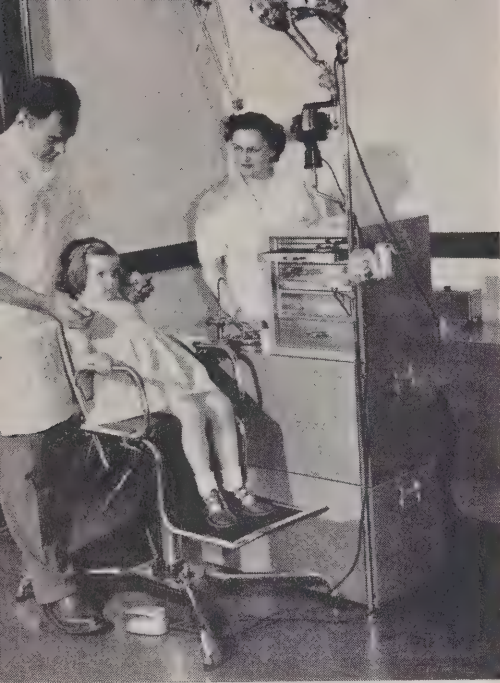


FIGURE 1

A *second* weapon in a preventive dental health program can be dental treatment. An educational-treatment program, designed particularly for the younger age groups, where prevention is most effective, serves the following functions:

- (1) it acts as an inducement and liaison to bring more children (and at an earlier age) into the scope of preventive dental health services, both from the standpoint of establishing early and regular dental examination and care, as well as from the standpoint of establishing good oral health habits;
- (2) it illustrates dramatically to the individual parent and to the community the importance of good dental health, as well as exemplifying the effectiveness of preventive dental health measures;
- (3) it provides a means whereby a portion of dental time from a busy general practice may be devoted to children's preventive dentistry;
- (4) it shares, on a community basis, the initial accumulated cost of restoring neglected mouths to dental health in situations where finances may otherwise be a deterrent.

Considering these factors it would seem that the addition of treatment services to a preventive program, apart from their value per se, may serve to increase and accelerate acceptance of

better dental health habits and care,⁵ and particularly in areas where the standard of dental health is low.

A *third* weapon is research. Through constant research:

- (1) more effective methods will be found of preventing and treating disorders of the mouth;
- (2) ways will be developed for more effective dissemination of knowledge that exists;
- (3) new yardsticks will be devised with which to evaluate existing programs.

PREVENTIVE PROGRAMS

Many groups, both professional and otherwise, have accepted their responsibility in this problem by providing preventive dental services through various means and in various areas throughout British Columbia. The Health Branch has shared in this responsibility by initiating a program which is designed not only to include these basic principles of prevention but, as well, to encourage, and extend financial aid so that such services may operate in as many communities throughout British Columbia as present finances and numbers of qualified personnel will permit. To this end financial and other aids have been made available as follows:

- (a) Grants are made available to larger established areas of population on a grade one school enrolment basis toward the annual operating costs of full-time dental health services. These programs are concentrated at the grade one and preschool child level. Periodically new equipment is added through the use of National Health Grants.
- (b) Transportable dental equipment on a loan basis, free of charge, and a grant toward the cost of travel, are made available and the Health Branch serves as a liaison in attempting to encourage dentists to provide educational-treatment services, particularly to the children, in the outlying areas of British Columbia where dental services are in short supply or non-existent. The sixteen sets of transportable equipment now in use have been purchased through National Health Grants. (See figures 1 and 2.)
- (c) National Health Grants are used to establish, equip and maintain dental

clinics in health centres for part-time use by dentists in private practice, to provide treatment services for community preventive dental clinics.

- (d) Subsidy grants are made available to encourage dentists to locate permanently in areas without a dentist which normally would not support full-time services of a resident dentist. These dentists are asked to provide their services to community preventive dental clinics.
- (e) The dental services of full-time members of the Health Branch are made available to some areas.
- (f) The Health Branch, through National Health Grants, has equipped and provides the salaries of the staff of the dental clinic at the Health Centre for Children in Vancouver. By agreement, dental treatment is also provided there for trainees referred from the G.F. Strong Rehabilitation Centre and for children from the Cerebral Palsy Society of Greater Vancouver.
- (g) Grants from the Department of Health and Welfare, Social Welfare Branch, are provided for dental care for younger dependents of persons in receipt of social assistance, which program at this time includes children of less than twelve years of age. This program is administered to a considerable degree by the British Columbia Dental Association.
- (h) Limited dental health services are made available through the Junior Red Cross; and at the local level through Service Clubs and other community organizations.
- (i) Fifty per cent matching grants-in-aid are contributed to the cost of authorized educational - treatment services through Community Preventive Dental Clinics sponsored by local groups and agencies in various communities throughout British Columbia. Monies for these grants are made available in part through National Health Grants and in part by the Government of British Columbia.

Through the combined efforts of various and many interested groups, preventive dental programs are now operating from metropolitan Vancouver in the south to Fort St. John in the north, from Zeballos on the west coast of Vancouver Island to Cranbrook in the east. All programs employ the principles of education, early treatment and research to varying degrees. Perhaps the practical mode of



FIGURE 2

operation of these services could best be explained by describing the program of Community Preventive Dental Clinics.

THE PROGRAM OF COMMUNITY PREVENTIVE DENTAL CLINICS

This program was initiated by the Health Branch in 1948 as a means of encouraging and aiding preventive dental services in the seventeen local Health Units which include all populated areas of British Columbia (with the exceptions of Greater Vancouver and Victoria). The clinics are built around clinical service to the younger age groups ranging from pre-school to grade three: education and research are brought in at any age level on every practical occasion. Eligibility of the above age groups for clinical services varies from area to area depending upon availability of finances and dental time, but in most instances upon dental time. Priority is on the basis of grade one pupils, pre-school children, pupils of grade two and lastly of grade three.

Treatment and chairside education for the most part are provided by dentists in private practice in their own offices: occasionally these services are supplied by public health dentists. Organization of treatment and community education is largely the responsibility of the Health Unit Director and his staff, assisted by a Regional Dental Consultant, and in some instances by the clerical services of a part-time dental clinic co-ordinator. Each dental consultant may serve from three to five health units. Administration

is shared by public health personnel and the local sponsoring group. Registration in the clinic may be free or may cost up to a maximum usually not exceeding five dollars for each child registered, and is determined by the local sponsoring group according to local circumstances.

The cost of services, which is paid for on a three-hour-session fee basis, is shared by the Health Branch and the local sponsoring group. This group may be a Parent-Teacher Association, School Board, service club, Women's Institute group or a combination of various organizations. Considerable credit must be given to the members of these groups for their continued and unselfish support.

Treatment services. Treatment provided within these clinics includes, prophylaxis, examination (including X-rays), extractions, relief of gingival disorders and restoration (excluding gold) of both the deciduous and permanent dentition. The parent is advised with regard to the need, if such exists, for additional services, which are not presently included in the program, for example, preservation of space and orthodontics.

During the 1955-56 program, in addition to 1750 pre-school and 1400 grade two and three children, over 40 per cent of the 7900 grade one children living in the areas served by the program were completed through 59 such clinics in which 74 dentists in private practice participated. Reports available since this paper was presented show that during the program year 1956-57, a total of 7,685 children were completed by 74 such clinics in which 96 dentists participated. In some areas these clinics provide the only treatment which may be obtained locally. The excellent co-operation of the dental profession in British Columbia is a major item in the continuing success of these clinics.

Education. Present day dental health teaching emphasizes the need for:—

- (1) regular oral examination and care beginning early, preferably at age three;

- (2) the development of proper oral hygiene, food and eating habits at a very early age, particularly with reference to the wise use of carbohydrates;
- (3) an understanding that when we speak of dental health we must consider periodontal disease, malformations and neoplasms as well as dental caries; and that we must think in terms of the whole system rather than an isolated part;
- (4) chairside education of both the child and parent by the dentist during clinic sessions.

Selections of posters and pamphlets, from many sources, for the various age levels, are made available by the Provincial Health Branch and distributed through the schools, dental offices, health unit clinics and at community meetings by public health personnel. Dental health manuals are distributed to school libraries as reference material for teachers and senior pupils. Films and film strips are available on request and their use is encouraged in the school classroom and at suitable community gatherings. A display of this material has been set up at local teachers' conventions with suggestions as to its use and how it may be obtained.

Through the co-operation of pharmacists, dental health window displays are arranged during the opening weeks of school to emphasize that the child's dental health should not be overlooked in preparation for this important step of development.

The Public Relations Committee of the British Columbia Dental Association sponsors an annual Dental Health Week that involves the help and co-operation of business and industry in addition to the groups already mentioned.

Research. Early in 1957 a pilot study was conducted to estimate the percentage of children who revisited a dentist within a period of time subsequent to their participation in an educational-treatment program as provided by two community preventive dental clinics. It was noted that while 43 per cent of the clinic grade one patients revisited a dentist within a

period of twenty months following their "completion" in the clinic (70 per cent of this number revisited their original clinic dentist), only 73 per cent of the comparable age group of all children of this region had ever visited a dentist.⁶ This may indicate a desirable result of such clinics. A more refined study is being planned in an attempt to support the thesis that treatment services enhance a preventive dental program.

A system by which may be attained the more accurate measurement of the number of children attending their family dentist is also under consideration. Thereby it is hoped that a better evaluation of the overall treatment coverage in a given area will result.

A much needed method of more accurately determining the size and nature of our dental health problem and for evaluating the effectiveness of present day approaches to this problem has been provided by the introduction of the annual British Columbia Dental Health Survey.⁷ The three areas chosen for study in 1956 were the Fraser Valley, Greater Vancouver and Greater Victoria. Other areas will be included in subsequent years until the survey covers all health units and metropolitan areas in the Province.

A comparison of dental health indices by combined ages from the 1956 survey indicates that Greater Victoria had the highest level of dental health with Greater Vancouver second, and the Fraser Valley third.⁸ A comparison between the 1956 survey results and those of 1957 (which have become available since this paper was presented) for the Fraser Valley, by combined ages, shows a significant improvement with regard to the percentage of children reported as having, "no caries defects" and "abnormal occlusion" and statistical tests indicate real improvement in "no dental defects".⁹ As all of the Fraser Valley is served by community preventive dental clinics, it may be that at least some of this improvement reflects the effectiveness of the services provided by these

programs.

Pre-fluoridation surveys have also been carried out in communities which have commenced fluoridation of communal water supplies. The methodology is such that these results are comparable with those of the continuing annual dental health survey.

SUMMARY

The dental health problem in British Columbia presents four pertinent aspects:

- (1) an accumulation of untreated dental disease coupled with a prevailing high incidence of dental disease,
- (2) a steadily increasing appreciation of dental health,
- (3) a limited number of qualified dental personnel to cope with the growing demands to provide treatment and
- (4) an unequitable distribution of existing private practitioners' services throughout the province by which the outlying areas suffer.

A program which would provide relief and an eventual solution of the problem would therefore have to effect

- (1) a reduction in the future burden of treatment needs by motivating, through a sound interest in dental health, the widespread use of all proven preventive dental health measures on both an individual and a community basis;
- (2) an increased number of qualified dental personnel by the establishment of a dental faculty at the University of British Columbia;
- (3) a judicious integration and expansion of adequately trained and qualified ancillary services;
- (4) a more equitable distribution of existing services.

From the previous description it will be noted that the present approach in this Province is based on a preventive program of shared responsibility which includes many of these tenets.

Only by a continued and deliberate effort can we hope to solve the dental health problem in British Columbia.

ACKNOWLEDGEMENT

Appreciation to Dr. F. McCombie, Director, Division of Preventive Dentistry, Health Branch, Government of British Columbia, for his many helpful suggestions.

BIBLIOGRAPHY

1. Morrey, Lon W.: "Teeth, Health and Appearance", Chicago: American Dental Association, 1947.
2. Compton, F. H.: "Dental Care Plans for Your Children", Canad. J. Pub. Health, 47:55 (Feb.) 1956.
3. "British Columbia Dental Health Survey, 1956, Part II," Health Branch, Government of British Columbia, Canada, 1956.
4. Macdonald, John B.: "A Prospectus on Dental Education for the University of British Columbia", Vancouver: University of British Columbia, Canada, 1956.
5. McPhail, C. W. B.: "A study to Evaluate Dental Visit Follow-up Subsequent to Treatment-Education services in a Preventive Dental Program." British Columbia D.A. News Bulletin, 12:12-15 (March) 1958.
6. *Ibid.*
7. "Dental Health Indices and Statistical Methods for Evaluation of Preventive Dental Services", Health Branch, Government of British Columbia, Canada, 1955.
8. *op cit* (3).
9. "British Columbia Dental Health Survey, Part I, 1957", Health Branch, Government of British Columbia, Canada, 1957.

Orthodontic Findings in Radiographs*

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This paper will attempt to show the wide range of orthodontic abnormalities which can be determined by the general practitioner, in his own radiographs. Some, indeed, can be treated by the general practitioner himself, if found early enough. More complex orthodontic procedures could be prevented by earlier radiographic diagnosis.

Bite wing radiographs are important and should be taken routinely, without leaving the decision to the patient. If the patient should demur at the extra cost, it should be remembered that dentists formerly assessed a fee for local anaesthesia — a practice almost unheard of today because the fee is included in the charge for any operative or surgical service. Indeed, from the orthodontists' point of view, full-mouth radiographs should be taken by general practitioners

to discover abnormalities anywhere in the arches, at earlier ages. All too frequently the first time abnormalities are revealed is in the orthodontists' full-mouth radiographic surveys — often when the opportunity for simpler treatment has been passed.

Radiographs can reveal the following categories of abnormalities:

1. Missing teeth and slow eruption of teeth.
2. Supernumerary teeth.
3. Impacted teeth.
4. Malposed teeth.

Missing Teeth: Lateral incisors and second bicuspid seem to be missing most frequently and often are absent in the same patient. (Fig. 1) In the mixed dentition, if anterior teeth appear to be missing, it is probable that teeth may be missing elsewhere. The bite-wing radiographs should be studied carefully to determine the presence or absence of second bicuspid and lateral incisors in

* Presented as a clinic at the C.D.A. — W.C.D.S. Convention, Winnipeg, Manitoba, June 1957.

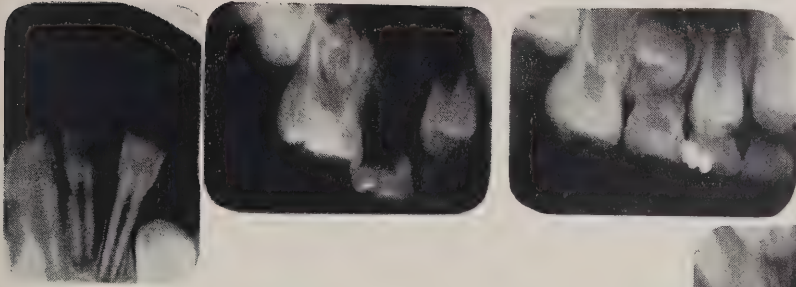


FIGURE 1 a & b

Lower central, and upper bicuspid missing. Patient age 9.



FIGURE 2 c & d

Same patient at 5 years of age with second bicuspid not calcified. D shows calcification at 7 years. Extractions in such instances as these should not be performed before 7-8 years of age.

both arches.

If second bicuspid only are missing, there are two alternatives. The second deciduous molars can be left in expectation of them lasting well into adult life. However, a large number of them seem to resorb spontaneously (Fig. 2). If there is evidence of resorption, remove the teeth as soon as possible, especially before the permanent dentition erupts fully. In four or five years the first molars, in all probability, will be in contact with the first bicuspid. If not, it will be a relatively simple orthodontic

procedure to bring the first molars forward into contact (Figs. 2, 3).

In instances of multiple missing teeth, generally the bicuspid and lateral incisors are absent. This creates a complicated treatment requirement which should probably be referred to a specialist. It may be possible to rearrange some of the anterior teeth into more pleasing groups, aesthetically, but a prosthesis will be undoubtedly required (Figs. 1, 3). Here all deciduous molars should be retained as long as possible (Fig. 3).



FIGURE 2

Bilaterally missing lower second bicuspid. Note lower right second deciduous molar breaking down by resorption at age 7 years.



FIGURE 3

Upper laterals missing, with upper second bicuspid. Patient age 12. Look for other missing teeth, if teeth appear to be missing in the anterior region.

Overly-retained deciduous teeth should be suspected and careful attention should be given to suppressed deciduous teeth because often the permanent successors are missing (Fig. 4).



FIGURE 4

Patient age 20 years. e/e retained, with 5/5 missing. Here e/e should be preserved as long as possible.

Supernumerary Teeth: Supernumerary teeth should be extracted routinely. Generally, these teeth are in close contact with other tooth buds, so care must be taken in their removal.

In the anterior region look for a large unerupted area, where the corresponding quadrant is well developed (Fig. 5a), and for unusual crowding, where space seems to be adequate (Fig. 5b).

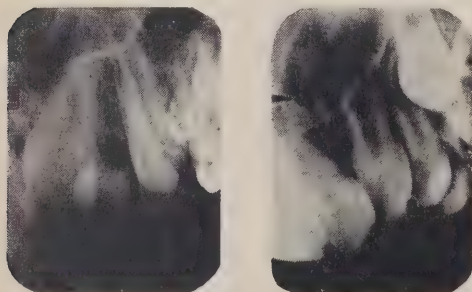


FIGURE 5

(a) Supernumerary tooth blocking eruption of central and lateral incisors. Extract. (b) Supernumerary central blocking eruption of central and lateral incisors, with extreme rotations. Extract.

The erupted supernumerary tooth is found most commonly in the mid-line or upper incisor region. If found early enough, especially in the mixed dentition stage, extraction alone is usually all the treatment required. If found later, an orthodontic procedure will probably be required to close the spaces. Early diagnosis here will reduce, if not eliminate, later orthodontic treatment (Fig. 5c).

The supernumerary tooth in mid-line, but high in the root area, is sometimes found in cases of diastema and often with the central incisors rotated. This supernumerary tooth should be removed (Fig. 5d).

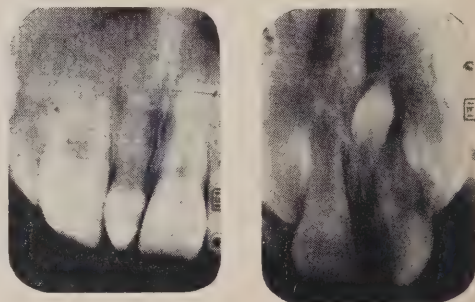


FIGURE 5

(c) Supernumerary tooth in mid-line, erupted. Extract. (d) Supernumerary tooth in mid-line, very high; causing rotation and diastema of centrals. Extract.

Impacted Teeth: Usually it is the cuspid which are impacted and, of course, third molars. The retained deciduous tooth in the anterior region may be a general sign that an impaction exists. Early removal of the deciduous tooth is indicated.

If the cuspid, or in fact any anterior tooth is impacted and providing the space is adequate, traction should be employed. Generally this procedure is better effected by an oral surgeon - orthodontist team (Fig. 6a and b).

If the first molar is suppressed beneath the distal of the second deciduous molar, extract the second deciduous molar. It is highly probable that the bicuspid will

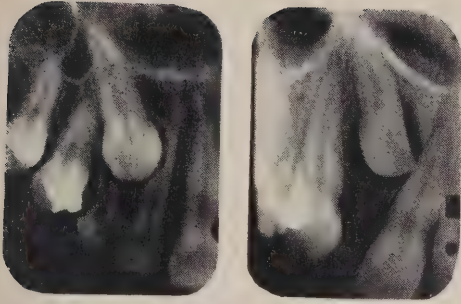


FIGURE 6

(a) Retained deciduous cuspid, and lingual impaction of permanent cuspid. Patient age 18. (b) Impacted permanent lateral incisor. Orthodontic treatment is required in each of these illustrations.

require removal at a later date (Fig. 7a).

Where bicuspid and molars are hopelessly impacted it is desirable to extract them. Sometimes it is possible for the oral surgeon to reposition a lingually impacted bicuspid tooth bud to permit normal eruption (Fig. 7b).

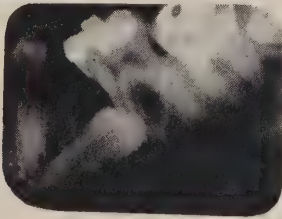
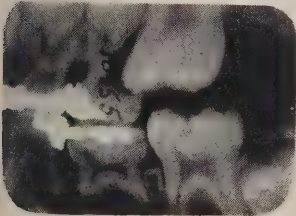


FIGURE 7

(a) First molar impacted under second deciduous molar. Deciduous molar should be removed; probably first bicuspid will have to be removed later, on eruption. (b) Completely impacted second bicuspid. Extraction only course.

Malposed Teeth: It is usually the cuspid which is malposed and the deciduous tooth is often retained (Fig. 8a). The extraction of the deciduous tooth will probably effect some change as the movement of the permanent tooth into the

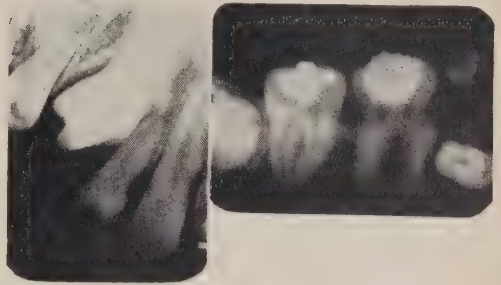


FIGURE 8

(a) Labially malposed cuspid, overlying completely first bicuspid on the buccal. Must be moved forward by orthodontic treatment, after deciduous cuspid removed. (b) Completely horizontal impaction of bicuspid. Extract.

open space will be facilitated. Generally, however, the movement of a malposed tooth requires some orthodontic intervention. It is advisable to remove the horizontally malposed bicuspid (Fig. 8b).

Summary: If any condition is suspected, x-ray immediately. It is essential to confirm, radiographically, the nature of clinical aberrations.

If marked diastemas are observed, perhaps there are missing teeth, or supernumerary teeth blocking eruption. Supernumerary teeth may also be the causative factors in unusually crowded conditions, where space appears to be adequate or where there are extreme rotations for no apparent reason.

Where there are spaces in the bicuspid region, with teeth unerupted long after exfoliation of the deciduous teeth, missing permanent teeth should be suspected. Radiographic confirmation should be obtained as soon as possible.

There is a possibility of missing permanent teeth when suppressed deciduous teeth are noted.

When overly-retained deciduous teeth are present, there is the possibility of impacted or malposed teeth.

Early diagnosis of these various orthodontic problems will often facilitate treatment and indeed make it possible for a greater number of general practitioners to undertake more treatment procedures.

15 Charlotte St.

Acute Porphyrria Complicating An Oral Surgery Procedure

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A Case Report

On August 11, 1957 one of the writers (A.A.A.) was called to the Doctor's Hospital, Toronto, to see a 40 year old white woman who had recently suffered an injury to her face. The patient's chief complaint was pain and tenderness in and around her lower left jaw and limited mouth function. The history of her present illness dated back three days when she had fallen down the cellar stairs at her home and had struck her jaw on the concrete floor. She was rather incoherent on admission and the details of her accident were rather difficult to obtain. She did, however, succeed in informing us that she had not been knocked unconscious and that she was unable to take certain drugs. She could not remember what these drugs were, nor where she kept a list with the necessary information. She was positive, however, that she was not allergic to penicillin.

Her past medical history was also difficult to obtain. She had been admitted to a local hospital and it was as a result of the tests that had been performed there, that she was told she should not take certain drugs. She had been given a list of these drugs on discharge, but she did not know where it could be located. Her husband was alive and well and they were childless. Her parents were both deceased, but the cause of their death was unknown.

PHYSICAL EXAMINATION

The patient was a well-developed, well-nourished moderately healthy-looking white female. She appeared slightly distressed and there was an obvious swelling around the left mandible. We could easily palpate a discontinuity in the lower border of the mandible and on intra-oral examination the fracture was seen to be compounded into the mouth. There were no palpable nodes.

The chest was clear to auscultation and percussion. There were no cardiac murmurs and the Blood Pressure was recorded at 130/78. There were no abdominal masses felt and the liver, spleen and kidney were non-palpable.

A neurological examination was essentially negative except that the patient was extremely apprehensive, and that there was anaesthesia in the lower left lip and left mandible posteriorly.

ORAL EXAMINATION

The patient presented with a moderate degree of trismus and a fairly extensive area of oedema in the left submandibular area. She had a complete upper denture which had been removed at the time of the accident, but which she could now not insert into place because of the discomfort. In the lower jaw she had six lower anterior teeth in poor state of repair and also a lower left and a lower right molar tooth. The lower left molar was in the line of fracture and had been

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badly shattered at the time of the accident. The fracture itself was seen to be compounded into the mouth and there were definite clinical symptoms of infection. The rest of the oral examination was essentially negative.

LABORATORY EXAMINATION

Because of the suspicious nature of her medical background an especially cautious attitude was adopted in her physical and laboratory examinations. An internist saw the patient on consultation and it was through his extensive examination that this case of acute porphyria was exposed. Since this is primarily a discussion from an oral surgical standpoint, we will not elaborate on the laboratory techniques used to disclose this condition. They basically require studies of the urine. The condition will be discussed later on in this report.

The Red Blood Cell count was 3,760,000, the White Blood Cell count 8,400, and the haemoglobin was 77.5%.

RADIOGRAPHIC EXAMINATION

The following films were ordered: 1. Posterior-anterior view of the skull. 2. Right and left lateral oblique jaw films. They revealed "a fracture of the left body of the mandible just anterior to the angle. The fracture takes place through the socket of the second molar tooth, which is itself fractured and splintered. There is medial and superior displacement of the posterior fragment".

OPERATIVE PROCEDURE

Ten grains of A.P.C. were administered and one hour later the patient was taken to the operating room. (Note that no sedation was used.) The inferior dental, lingual and long buccal nerves were anaesthetized and the fractured tooth on the left side was extracted. Special attention was given to avoid causing any further displacement of the mandibular fragments.

The face and neck were then prepped with Cetavalon and the left submandibu-

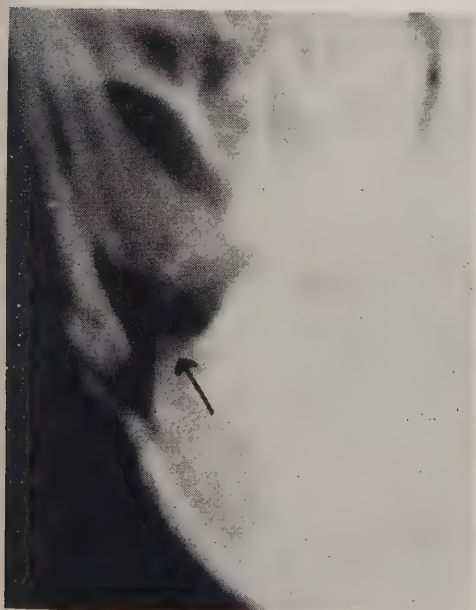


FIGURE 1

Posterior Anterior Jaw film taken pre-operatively showing the fracture of the left body of the mandible just anterior to the angle of the jaw.



FIGURE 2

Lateral Jaw film taken preoperatively and showing the molar tooth in the line of fracture and the medial and superior displacement of the posterior fragment.



FIGURE 3

Lateral Jaw film taken postoperatively to show the reduction of the fracture and the immobilization of the fragments by a single strand figure 8 stainless steel wire.

lar area was infiltrated with about 3 c.c. of local anaesthetic. An attempt was made to include the branches of the Great Auricular and the Anterior cutaneous colli nerves by injecting half-way down the belly of the sternomastoid muscle and just anterior to its anterior border.

Sterile drapes and towels were applied in the usual manner to allow for visualization of the lower left jaw from the angle forward to the menton. A 2 inch long incision was made through the skin just below the shadow of the mandible and the dissection carried down through skin, fascia, muscle and periosteum to expose the mandible at the fracture site. The external maxillary artery was encountered during the dissection and it was clamped, cut and tied off with 000 cat gut. A completely loose fragment of bone was found at the fracture site and it was elected to remove it. The mandibular fragments were then grasped with bone forceps and the fracture reduced. Two drill holes were made on each fragment above and below the mandibular canal and a stainless steel wire gauge .024 was strung in a figure of eight fashion using a curved Mayo needle to simplify the procedure. The deeper tissues were sutured with 000 cat gut and the skin was closed with in-

terrupted black silk sutures. The closed incision was painted with Whitehead's Varnish and a pressure dressing applied to control oozing and post-operative oedema. The patient was returned to the ward fully awake and feeling very comfortable. She informed us that she experienced very little pain or discomfort during the entire procedure, which lasted approximately one and a quarter hours.

The post-operative course was uneventful. The patient was kept on 2 c.c. Dicrystin twice daily and any pain that did present was controlled quite readily with 15 grains of aspirin every four hours. The skin sutures were removed on the fifth post-operative and the patient was discharged from the hospital on the sixth day.

DISCUSSION

Porphyria may be defined as a constitutional fault or "inborn error" in the porphyria metabolism. The condition is one in which large quantities of physiological porphyria are formed and excreted. To facilitate the discussion we have chosen perhaps the most simple classification. (Best and Taylor). In this classification there are three types of the disease, namely: congenital, acute and chronic.

Congenital porphyria is characterized by light sensitivity which may result in blistering and often necrosis of those parts of the body which are exposed to the sunlight. The urine exhibits abnormally large quantities of the different types of porphyrins, e.g., copro-porphyrin and uro-porphyrin type I, and sometimes some proto-porphyrin.

The age of the onset is in early infancy or childhood, and one may see a brownish staining of the teeth. The distribution of this condition with respect to sex is equal.

In *acute porphyria* light sensitivity does not occur but there are nervous, abdominal and mental symptoms. There may be severe cramps and vomiting and a progressive asymmetrical paralysis. Large amounts of porphyrin type III are excreted.

The signs and symptoms of acute porphyria are rarely seen before puberty and this specific condition is more common in females. There is quite commonly a familial tendency. It is an established fact that the acute attacks may be chemically precipitated, and the most common drugs responsible for this are trional, barbiturates and less frequently a variety of other chemicals including alcohol.

In the chronic form of the disease which is more common in males, copro-porphyrin type III and some copro-porphyrin type I are excreted in the urine and faeces. There is only a mild light sensitivity.

The essential problem with this case was therefore the considerable risk involved in using the hypnotics or barbiturates either as premedication or as basal anaesthesia. This, combined with the nature of her injury, made intubation an exceedingly difficult task. We feel that our choice of 2% Xylocaine with 1/50,000 epinephrine was well made.

CONCLUSION

We report this case because this is the first time that we have encountered this condition and also because we could not

find much mention of it in the dental literature. Our classification and review of the signs and symptoms are by no means complete, but they will serve, we believe, as an introduction to a condition with which we are generally too unfamiliar.

Porphyria is uncommon enough; however when it is superimposed on a patient requiring extensive oral surgery, it presented a real challenge.

The fact that the problem was satisfactorily resolved with local anaesthesia administered both intra and extra-orally makes us feel that perhaps we are too eager to submit patients to general anaesthesia to repair injury to facial and jaw bones. In a relatively-well patient presenting no contraindications to the use of barbiturates as premedicants, local anaesthesia, with all its good qualities, might well be the method of choice.

BIBLIOGRAPHY

- Bell, George H., Davidson, J. N., Scarborough, H. Textbook of Physiology and Biochemistry ed. 3 pp. 368-413 E. & S. Livingston Ltd., London and Edinburgh.
 Best, C. H., Taylor, N. B. The Physiological Basis of Medical Practice, ed. 6 pp. 1357, Williams and Wilkins, Baltimore.
 Cecil, Russel L., Loeb, Richard F. A. Textbook of Medicine ed. 9 W. B. Saunders Co. 1955.
 Guyton, Arthur C. Textbook of Medical Physiology ed. 1 W. B. Saunders 1956.
 Houssay, Bernardo A. Human Physiology ed. 2 McGraw-Hill Co. of Canada Ltd. 1955, Toronto.
 West, Edward S., Todd, Wilbert R. Textbook of Biochemistry ed. 2 MacMillan Co., New York, 1955.

ORTHODONTICS AND PUBLIC HEALTH — The question of orthodontics is no longer something that concerns those who have a lot of money. Orthodontics is too important in the life and welfare of children for such a limited view to prevail. The benefits of orthodontics are now appreciated by families of children of every economic level.

The "Principles for Public Dental Programs for Children", published by the Children's Bureau of the Federal Security Agency under the Social Security Administration, defines orthodontics as a public health function in the following terms:

"The correction of dentofacial deformities when efficiency of the dental mechanism is threatened by a present or potential condition which will cause tissue injury or interfere seriously with function or with mental or physical development." — J. A. Salzmann, "Orthodontics as a Public Health Activity," New York D. J. 15:140, March 1949.

ABSTRACTS

The Tasmanian Dental Act—Progress in Reverse

DR. J. M. WARK

On the 20th November 1957, there was passed by the Parliament of Tasmania, the amendments to the Dentists' Act, a Bill which will be regarded as one of the most retrogressive pieces of legislation in the history of the dental profession. Two sections have been included against the advice of professional and University authorities.

The first of these concerns the provision of a special examination for certain illegal practitioners with a view to their registration as dentists, and the second grants to dental mechanics the right of undertaking repairs, and of constructing dentures with a direct contractual relationship with the public.

During the past hundred years there has been a gradual evolution of standards in all of the leading nations of the world and it has been accepted that none other than a graduate of a University Dental School is fitted to practise dentistry. The Tasmanian legislation will permit unskilled and untrained individuals to practise, and consequently it is a menace to public health.

Illegal practice flourished, particularly in the years immediately following the Second World War. Eventually the position was reached where many individuals accepted the dental mechanic as the nor-

mal source of supply for a denture, and at this stage the dental mechanics launched their campaign for chairside status.

Subsequently, the Government announced its intention of introducing legislation to grant to the mechanics the right of direct contractual relationship with the public.

Repeated conferences, and approaches to political leaders over the next three years failed to produce a solution. The profession was willing to grant the mechanics licensing and increased status and conditions but would not concede a point on the vital issue. Two Select Parliamentary Committees were appointed and the report of each Committee proved favourable to the profession, but despite its findings the second Committee recommended that the mechanics be given the right of dealing with the public, and that certain illegal practitioners be given a special examination with a view to registration as dentists.

The Committee stated that it could find no factual evidence to support the claim that dentists were exploiting the public by charges far in excess of those usual in higher professions. Further, it had reason to believe that many mechanics fall far short of standards in prosthetic work

which would justify their being given the right to deal direct with the public.

The passage of the Bill through the Houses of Parliament was marked by long and acrimonious debates, however the measure passed all stages and Royal assent was obtained.

Under the provisions of the Act "a dental mechanic may on his own account and in direct relationship with the public, undertake, take impressions for, supply or carry out the mechanical construction, adjustment and fitting of artificial dentures for a human subject on a certificate of a dentist that the subject's mouth is in a fit state to receive artificial dentures". How

this section can be administered is obscure, but despite a rooted objection to the clause the members of the profession, as law abiding citizens must co-operate.

A course of training for dental mechanics by the Dental Mechanics Registration Board must be established. Obviously, this course must include the clinical and theoretical aspects of denture construction, and since there is no precedent on which to draw and no dental school or hospital in Tasmania. it is difficult to see how it can be effected.

Australian Dental Journal
Vol. 3, No. 1, February 1958

Is Our X-Ray Machine a Hazard?

IRA R. PAUL, B.A., New York.

Many means at the dentist's disposal to make his x-ray machine a safe diagnostic instrument, plus the care and precautions taken by the operator, will resolve the question: "Is our x-ray machine a hazard?"

The hazards to both the patient and the operator in the use of a dental x-ray machine can be vastly minimized by the following:

Increased voltage. Higher voltages than the conventional 55 to 65 KVP will produce more of the harder image-forming roentgen rays.

Added filtration. At least 2 mm. of pure aluminum will reduce the dose to the patient's face by shielding out the nonimage-forming soft rays.

Collimation. A lead diaphragm to reduce the diameter of the primary beam to the limits of the area under diagnosis will reduce exposure to the patient and to the operator.

Fast films. Faster films and longer de-

veloping time will reduce the exposure time and, consequently, the total exposure to patient and operator.

Distance. Exposure to the operator will be greatly reduced for each foot of distance he can put between himself and the machine and patient.

Long cone technique. This will reduce exposure to patient and operator.

Leaded rubber apron. This may be used to protect reproductive organs of patients, especially children.

Holding of film. Under no circumstances should the dentist or technician hold the film in the patient's mouth.

Plastic cone. It should be kept in mind that this is a pointer and not a protective device.

Protection survey. It is advisable to have a complete monitoring survey made by a qualified expert. Film badge survey may be used as a partial protection analysis.

Oral Surgery, Oral Medicine and Oral Pathology
Vol. 11, No. 3, March 1958

A Projection of the Function of the Dental Assistant in Meeting the Dental Manpower Needs of the Future

RUDOLPH H. FRIEDRICH, D.D.S.

There are problems inherent in expanding the proper utilization of dental assistants in the dental practice to the end that the dentist can increase the availability of dental care to the public and the personal fulfillment he receives from the practice period:

I. Education and training of the dentist in the business and management aspect of the expanded dental practice as they relate to:

- a. The understanding of fixed overhead costs as an investment which should produce a return in increased net income.
- b. The administrative responsibilities and practices which he will have to assume in order to reap the benefits of an efficient, properly staffed practice.
- c. The understanding of personnel relations and of the personal fulfillment of job satisfaction and financial remuneration which motivate the employee.
- d. The development of a career pattern for the dental assistant in order to assure maximum stability and efficiency of the office staff with a minimum of employee turnover.

II. Development of education programs to produce dental assistants who:

- a. Can assume their duties and responsibilities with a minimum of further training except that which is necessary to adapt the individual to the particular characteristics of the practice.
- b. Will be sufficient in number to meet the demand and offset the turnover caused by the biologic characteristics of the work force.

III. Conduct of studies and compilation of data on:

- a. Present utilization and need for dental assistants by states and by regions within states.
- b. Utilization of existing educational facilities for training of dental assistants.
- c. Length of time the new young assistant will be available to the work force and number of older women who return to the work force as the result of economic necessity.

- d. Realistic job specifications for dental assistants in the several arrangements of dental practice—for example: the one-assistant office with one chair; the multiple-assistant office with one dentist and multiple chairs; the various arrangements of group dental practice.

IV. Development of recruitment programs in the high schools in order to attract young women to the career of a dental assistant.

V. Investigation of the possibility of establishing registries for dental assistants in order to make the best possible use of part-time availability of trained assistants to assure the dentist of assistance in times of emergency conditions in his regular staff and to provide him with a source of well trained replacements for his normal personnel turnover. It may be possible to make this service an added feature of existing nurses' registries.

There can be little doubt that sound practice administration will be a major factor in creating a wider distribution of dental care to the public. The need for more information on practice administration and the development of principles for its proper application provides a challenge to the dental educator, the practising dentist, the public health dentist and the organized dental profession.

The application of sound principles of practice administration will go a long way in keeping the management of the profession in the hands of the profession with the assurance that the public will receive the highest standards of dental care within its ability to meet the costs of the care. The profession will also be assured of adequate return in the satisfaction of service to the community and in a very reasonable requirement of economic and social status.

CONVENTION SUPPLEMENT

THE CANADIAN DENTAL ASSOCIATION
ANNUAL CONVENTION

OCTOBER 26-29, 1958

The Queen Elizabeth Hotel, Montreal, Quebec

organized by

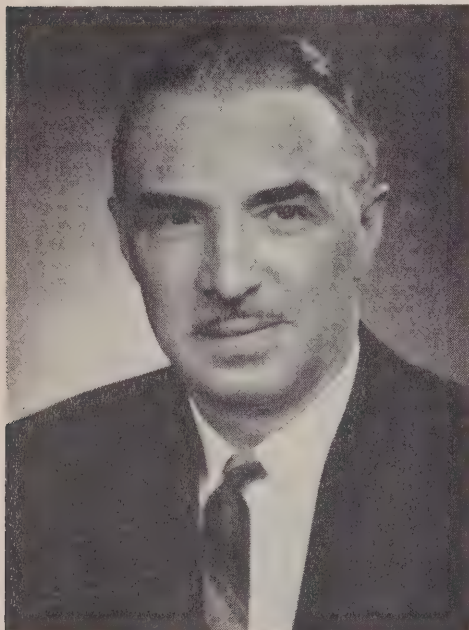
La Société Dentaire de Montréal

under the auspices of

The College of Dental Surgeons of the Province of Quebec



DOMINION SQUARE, MONTREAL



On the occasion of this, the fifty-sixth annual meeting of the Canadian Dental Association, it is my most pleasant duty to extend greetings on behalf of the Board of Governors, as well as to convey my own personal welcome.

It is also a privilege to have the College of Dental Surgeons of the Province of Quebec, and the Société Dentaire de Montréal as associates at this convention.

A. Gerald Racey

President, Canadian Dental Association

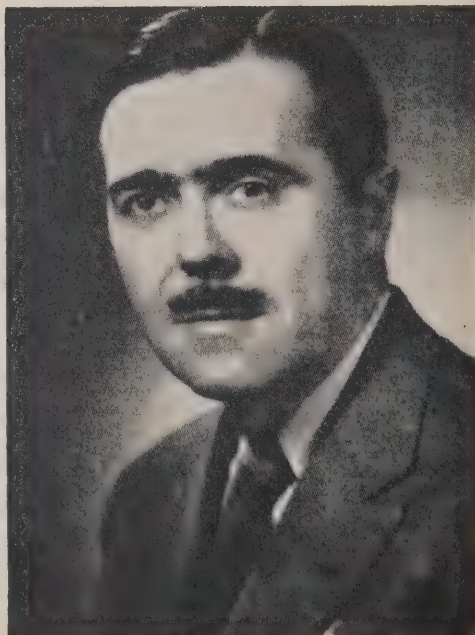
The College of Dental Surgeons of the Province of Quebec extends a warm and sincere invitation to all members of the Canadian Dental Association and to all members of recognized Dental Societies to attend our National Convention on October 26-29, 1958.

A large registration should reward the convention committee and cooperating local societies for their efforts in preparing a very interesting programme of scientific and social activities for you all.

We assure you of a good hospitality in Montreal and welcome you with your wives and family.

N. A. Duhe'

President, College of Dental Surgeons, P.Q.



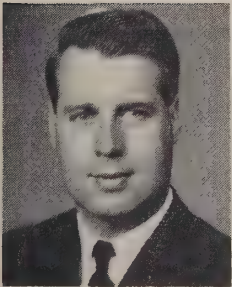


On behalf of the Convention Committee, I most cordially invite you all to the 1958 National Convention of the Canadian Dental Association, organized this year by "La Société Dentaire de Montréal".

All members of the different committees have worked with enthusiasm to prepare for you an outstanding scientific program together with numerous social activities which should bring pleasure for all who will be with us.

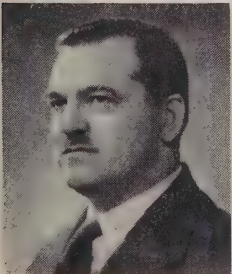
The committee is looking forward to extend to you the warmest welcome in the Metropolis of Canada, and is sparing no effort to make your stay in Montreal a most enjoyable and profitable one.

Roger Chénette
Convention Chairman



Dr. D. B. Ward
Program

Dr. G. de Montigny
Program



Dr. C. A. Durand
Finance

Dr. L. Lépine
Entertainment



PROGRAM

Sunday, October 26, 1958

- 1:00 P.M. Registration — Office.
Golf (weather permitting).
Evening Musicale.

Monday, October 27, 1958

- 8:30 A.M. Registration — Office
9:00 Scientific Exhibits.
Commercial Exhibits.
9:30 Table Clinics.
11:30 Official Opening of the "Salon d'Art".
12:30 P.M. C.D.A. Luncheon (including ladies).
Guest Speaker: His Eminence Cardinal Paul-Emile Léger.
2:00 C.D.A. Business Meeting. President's Report.
3:00 The Grieve Memorial Lecture presented by the C.D.A. Orthodontic Section. Dr. Wilton M. Krugman, Phil., Penn.
4:30 Gallup Poll Type Survey.
7:00 Cocktail Party and Buffet.

Tuesday, October 28, 1958

- 8:30 A.M. Registration — Office
9:00 Scientific Exhibits.
Commercial Exhibits.
"Salon d'Art".
9:30 Lecture: "*Dentistry for Children*".
Dr. Wilfrid H. Feasby, Hamilton, Canada,
presented by the C.D.A. Section of Dentistry for Children.
11:00 Lecture: "*Oral Surgery of Interest to the General Dental Practitioner*".
Dr. W. Harry Archer, Pittsburg, U.S.A.
presented by the Canadian Society of Oral Surgeons.
12:30 P.M. Luncheon.
Guest Speaker: Mr. Maurice Tremblay,
Investment Consultant, Montreal, Canada.
Head Table: Dental Societies of the Province of Quebec.
2:30 Essay: "*Epitheliomas of the Floor of the Mouth and Mandible*".
(Diagnosis and Treatment), followed by a panel discussion.
Dr. Pierre Cernéa, Paris, France.
3:00 Scientific Films.
4:15 Lecture: To be announced.
Evening Class Reunions.

IN BRIEF

Wednesday, October 29, 1958

- 8:30 A.M. Registration — Office
- 9:00 Scientific Exhibits.
Commercial Exhibits.
"Salon d'Art".
The Exhibits and the "Salon d'Art" close at noon on Wednesday.
- 9:30 Clinics.
and
10:30 Each of the six lectures, which will last 45 minutes, will be presented twice: at 9:30 and 10:30.
- 1.— "*Amalgam*".
Dean J. D. McLean, Halifax, Canada.
 - 2.— "*Management of Routine Cases of Periodontal Diseases*".
Dr. Georges Pelletier, Montreal, Canada.
 - 3.— Panel on Endodontics
Dr. Wilf J. Johnston, Montreal, Canada.
Dr. Vincent Tremblay, Montreal, Canada.
Dr. H. H. Pearson, Montreal, Canada.
 - 4.— "*Quelle attitude adopter en présence d'une leucoplasie ou d'un lichen plan*".
Dr. Pierre Cernéa, Paris, France.
 - 5.— "*Significant Aspects of Esthetics for Complete Dentures*".
Dr. Claude W. Adams, New York, U.S.A.
 - 6.— "*Fixed and Removable Partial Restorations as Applied to Oral Rehabilitation*".
Dr. H. R. Skurnik, Montreal, Canada.
- 9:30 A.M. Scientific Films.
- 12:30 P.M. Luncheon.
Guest Speaker: (To be announced).
Head Table: La Société Dentaire de Montréal.
- 2:30 Panel: "*Temporo-Mandibular Joint*".
Dr. L. Laszlo Schwartz, New York, U.S.A.,
Dr. Melvin Moss, New York, U.S.A.,
Dr. Albert W. Grokoest, New York, U.S.A.
Chairman: Dr. John W. Gerrie, Montreal, Canada.
- 4:00 Report of Gallup Poll Type Survey and Comments by Experts.
- 7:00 President's Dinner and Dance. Entertainment.

NOTE: Registration fee includes all receptions and luncheons mentioned on the program plus the President's Dinner and Dance.

SIMULTANEOUS TRANSLATION

For the first time in a Canadian Dental Convention a complete system of

SIMULTANEOUS TRANSLATION

will be in use during all business and scientific general sessions. There will be enough earphone sets for all. An expert will translate either in French or English all that will be said during each meeting.

SALON d'ART

A cordial invitation is extended to all dentists, their family, and their office personnel to send in exhibits such as: paintings, sculptures, photographs and handicrafts.

More information will follow.

COMMERCIAL EXHIBITS

A large exhibit containing all the latest in equipment and supplies, has been arranged.

Exhibits open — Monday and Tuesday — 9:00 a.m. - 5:00 p.m.

Wednesday — 9:00 a.m. - 12:00 noon.

ROYAL CANADIAN DENTAL CORPS ASSOCIATION

An informal cocktail hour will provide the opportunity of a Reunion of all former and present officers of the Corps and dentists who are veterans of other services. The ladies are cordially invited.

R.C.D.C. Officers Mess.

Tuesday, October 28th; 5:00 - 6:00 p.m.

4600 Lacombe Avenue — Montreal.

Transportation will be arranged.

Information at Registration Desk.

ACKNOWLEDGMENT

We wish to express our thanks to the Montreal Dental Club for having kindly accepted to join the 1958 Annual Fall Clinic activities with those of the C.D.A. Convention.

Convention Committee.

Canadian Dental Nurses' and Assistants' Association

11th ANNUAL CONVENTION

being held in conjunction with

The Montreal Dental Nurses' and Assistants' Association

OCTOBER 26-29, 1958

The Queen Elizabeth Hotel, Montreal

The social side of this Convention will include a Get-together, Coffee Party, a Musicale which will interest each and every one of you because you will be introduced to our French Canadian Artists, a tour of the high spots of Canada's largest city and a Luncheon at the new Helene de Champlain Restaurant on beautiful St. Helens Island, where you can get a birds-eye view of the progress being made on the St. Lawrence Seaway. This is only some of the entertainment which will make this 1958 Convention better than ever.

However, with all these social events we have not forgotten the purpose of Education of the Dental Nurses and Assistants profession. Various phases of Dentistry will be discussed. A few of the topics will include Orthodontia, Periodontia and the role that the Dental Nurse can play in diagnoses, by taking a complete case history. We must not forget to mention our table clinics which are a very important part of our Convention.

Please try your utmost to be with us in October, we are looking forward to seeing you. This is your Convention and only you can make it a success.



HELENE DE CHAMPLAIN RESTAURANT

LADIES' PROGRAMME



MRS. A. G. RACEY
Honorary President



MRS. ROGER CHARETTE
President

Welcome ladies.

We are delighted to welcome you in Montreal and hope you will join us in all of the activities planned for your enjoyment by the Ladies' Committee.

With the convention being held on the 26-27-28 and 29th of October 1958 in the newest Canadian hotel "The Queen Elizabeth", you will enjoy facilities for shopping, being close to all leading stores.

On behalf of the Ladies' Committee, I extend a very sincere welcome.

Bevile Charette

Sunday, October 26, 1958

1:00 P.M. Registration — Office.
Golf (weather permitting).

Evening Musicale.

Monday, October 27, 1958

8:30 A.M. Registration — Office

11:30 Official Opening of the "Salon d'Art".

12:30 P.M. C.D.A. Luncheon
Guest Speaker: His Eminence Cardinal Paul-Emile Léger.

3:00 Special Event.

7:00 Cocktail Party and Buffet.

Tuesday, October 28, 1958

- 8:30 A.M. Registration — Office
- 9:00 "Salon d'Art".
- 10:30 Bus Departure for the Laurentian Mountains.
- Noon Arriving Chantecler Hotel, Ste-Adèle, P.Q.
- 12:30 P.M. Cocktail.
- 1:00 Luncheon.
- 3:30 Return.
- 5:00 Arriving Montreal.
- Evening Class Reunions.

Wednesday, October 29, 1958

- 8:30 A.M. Registration — Office
- 9:00 "Salon d'Art".
- 11:00 Conducted Tours.
- 3:00 P.M. Fashion Show.
- 7:00 President's Dinner and Dance.



THE CHANTECLER, STE-ADELE, P.Q.

National Convention of The Canadian Dental Association

Dr. Chas. A. Durand, Treasurer,
Registration Committee,
758 Sherbrooke Street West,
Montreal, Que.

REGISTRATION FORM

MONTREAL
October 26th to 29th, 1958

PLEASE REGISTER: (YOUR NAME ONLY — For names of wife, children and other persons,
see below.)

NAME
(PLEASE PRINT)

ADDRESS

CITY PROVINCE

PLEASE FIND
ENCLOSED \$.....

Cheque payable to
C. D. A. 1958 Convention

REGISTRATION FEE	
Single	\$35.00
Wife	10.00
TOTAL	\$45.00

PLEASE COMPLETE THIS SECTION (if needed)

ADDITIONAL REGISTRATION

I will be accompanied by:

MY WIFE
(PLEASE PRINT)

MY CHILDREN

Number:

Age:

(No registration fee for children unless
attending functions)

IMPORTANT

ANY OTHER PERSON DESIRING TO ATTEND
MUST COMPLETE SEPARATE REGISTRATION
FORM.

IMPORTANT

This registration fee of \$35.00 for
the dentist and \$10.00 for the escort
covers all lunches, receptions and
dinners mentioned in the programme,
as well as the PRESIDENT'S BAN-
QUET and DINNER.

Detach and return

Canadian Dental Association National Convention

Dr. Chas. A. Durand, Treasurer,
Housing Committee,
758 Sherbrooke Street West,
Montreal, Que.

RESERVATION FORM

MONTREAL
October 26th to 29th, 1958

Please Specify Desired Accommodation
BY NUMBER:

1st CHOICE

2nd CHOICE

3rd CHOICE

ARRIVAL DATE: HOUR

DEPARTURE DATE: HOUR

NAME
(PLEASE PRINT)

NUMBER OF PERSONS

ADDRESS

CITY PROVINCE

NO RESERVATIONS WILL BE MADE IF REQUEST IS
NOT ACCOMPANIED BY A REGISTRATION FORM

Reservations Will Be Made In The Order Of Their Arrival

1. If given no alternative, reservations will be made at next higher rate available.
2. Reserved rooms not guaranteed for MORNING arrival.
3. Reservations will be cancelled at 6 P.M. on the date specified unless arrangements are made for late arrival.

TYPE OF ACCOMMODATION AND RATE REQUESTED

Hotels	The Queen Elizabeth	Windsor	Laurentien
	SECTION "A" PER DAY	SECTION "B" PER DAY	SECTION "C" PER DAY
Room and Bath for One	No A-1 from \$9.00 to 14.00	No B-1 from \$8.00 to 13.00	No C-1 from \$7.50 to 10.50
Double Bedroom with Bath for Two	No A-2 from 13.00 to 26.00	No B-2 from 12.00 to 17.00	No C-2 from 10.85 to 12.00
Twin Bedroom with Bath for Two	No A-3 from 13.00 to 30.00	No B-3 from 12.00 to 18.00	No C-3 from 11.85 to 14.50
Three Persons in One room with Bath	No A-4 from 14.00 to 18.00	No B-4 from 15.00 to 21.00	No C-4 16.00 up
Suite (Sitting Room, Bedroom and Bath) for One	No A-5 from 26.50 to 36.00	No B-5 from 19.00 to 35.00	No C-5 16.00 up
Suite for Two	No A-6 from 26.50 to 36.00	No B-6 from 23.00 to 50.00	NIL
Suite (Sitting Room, 2 Bedrooms with Bath) for Four	No A-7 from 50.00 to 75.00	NIL	NIL
Suite, deluxe	No A-8 from 85.00 to 150.00	NIL	NIL

**N.B. In order to guarantee accommodations, reservations must be received
not later than September 22nd 1958.**

EDITORIAL

On Being Elected to Office

At this time of year it is almost traditional that newly elected boards, councils, or executives begin to develop plans for their associations or societies which will constitute the programs for these groups in the coming year. Some executives will devote much time and serious contemplation to the development of their societies' meetings and projects while others will, more or less, give obeisance to the philosophy that matters will take care of themselves.

Sometimes we are constrained to wonder why there should be such overwhelming and co-operative enthusiasm among the members of certain societies while in others, disinterest and almost antagonism exist. It is our opinion that the calibre of the leadership is the significant factor. Conscientiousness, enthusiasm and seriousness of purpose among those elected to positions of responsibility beget similar responses within the membership.

It is unfortunate, perhaps, but a lack of preparation shows. If organizations are to enjoy a spirited and co-operative roster of adherents adequate program preparation is mandatory. The officers must be aware of their responsibilities and discharge them. The clinicians must realize the calibre of contribution expected and strive to achieve it.

From Newfoundland in the east to Vancouver Island in the west, the many society executives occupy positions of pre-eminence and it is upon these people that

the progress of Canadian dentistry largely depends. It is always difficult for any individual in a relatively large group to appreciate the fact that his contribution is significant and perhaps even vital to the over-all development of his profession. It is not entirely appreciated that when the individual fails to fulfill the duties of the office to which he has been elected, his profession's growth and achievement have been inhibited or circumscribed to that degree.

We can recall one time being present at the annual Grandstand Show at the Canadian National Exhibition. While the performance, itself, left much to be desired, one portion of that program will remain in our memory as long as we shall live. The lights of the grandstand were turned off. On the previous instruction of the Master of Ceremonies and at a given signal, flames from twenty thousand matches, held in the hands of the patrons in attendance, burst forth into the blackness of the night. An audible gasp could be heard throughout the audience and a thrilling tingle, we are sure, coursed up the spines of the patrons in attendance. The flame from a match is a simple thing, an everyday occurrence, and yet when combined with twenty thousand others in that huge amphitheatre, it created a spectacle we shall never forget.

Think, if you will, of the contribution to our profession which could be made if each person whom we elect to office and,

yes, each person who elects him to office, burst forth in the flame of enthusiasm in a similar manner.

Sincere and conscientious attention to one's elected position is not always easy. Decisions must sometime be made and policies developed which do not meet with the entire approbation of the members. The executive or council, however, have available the pertinent facts and information to enable them to develop these policies and record enactments, and are therefore in a better position to render such decisions. If the area of consideration is one which is generally recognized to be beyond the sphere of competence of dentists, it is possible to retain consultative advice in order that deliberate and wise decisions may be made. The general membership however, do not usually possess such information or have available expert opinions from other pertinent areas of interest.

Whether the measure is popular or not, if, in the sincere and conscientious view of the members elected to make such decisions, there is a need for such action to further the profession's development or contribution, there should be no hesitation in making the necessary decisions.

One of the fundamentals of executive action and one which is frequently misunderstood, even perhaps forgotten, is referred to by Walter Lippman in his book *The Public Philosophy*. Executives in democratic governments (or democratic organizations) owe their primary allegiance to the law and to the office, not to the electorate. Their position therefore, requires them to judge whether a proposition is good, not whether it is popular — whether it will work well and prove itself not whether the active talking constituents like it immediately. This attitude among elected officials requires, often, fortitudinous resolve. It is easier to float with the stream than to battle the current. The murky depths, however, toward which some streams travel are not to be compared to the fresh and vibrant sources from which the streams arise.

The members of our profession who have been entrusted with the duties and responsibilities of office, have a great and challenging opportunity. To them has been given a mandate to consider the destinies of our profession and guide dentistry along those paths which lead it to greater usefulness and service.

THE LIBRARY

ARCHER, W. H.: A manual of dental anesthesia. 2nd ed. Philadelphia, Saunders, 1958. 346 p. illus. \$8.50.

DENVER RESEARCH INSTITUTE. UNIVERSITY OF DENVER: Proceedings of the sixth annual conference on industrial applications of X-ray analysis. Denver, Colorado, August 7-9, 1957. William M. Mueller, Editor. 494 p. Mimeo. illus.

DRIPPS, R. D.; ECKENHOFF, J. E. and VANDAM, L. D.: Introduction to anesthesia; the principles of safe practice. Philadelphia, Saunders, 1957. 266 p. illus. \$4.75.

EUROPEAN ORTHODONTIC SOCIETY: Report of the thirty-second congress held at the Grand Hotel, Stockholm, Sweden, August 9th-13th, 1956. The Hague, 1956. 355 p. illus. \$13.50.

HAM, A. W.: Histology. 3rd ed. Lippincott, Montreal, 1957. 894 p. illus. \$11.00.

POLLACK, R. S.: Tumor surgery of the head and neck. Philadelphia, Lea and Febiger, 1957. 101 p. illus. \$5.00.

RYAN, R. E.: Headache; diagnosis and treatment. 2nd ed. St. Louis, Mosby, 1957. 421 p. illus. \$6.75.

THOMA, K. H.: Oral Surgery. 3rd ed. St. Louis, Mosby, 1958. 1607 p. illus. \$27.50.

THE YEAR BOOK OF DENTISTRY 1957-58: Chicago, Year Book Publishers, 1958. 480 p. illus. \$6.50.

THE YEAR BOOK OF EAR, NOSE AND THROAT and MAXILLOFACIAL SURGERY 1957-58: Chicago, Year Book Publishers, 1958. 383 p. illus. \$7.50.

BOOK REVIEWS

Handbook of the Fundamentals of Partial Denture Planning. Prepared by: G. B. Shillington, CD., DDS., BSc. (Dent.), FICD—Colonel, RCDC. Published by: The Queen's Printer. Pages: 70. Price: \$1.00. Illustrations: 57. Paper Cover.

The Author of this handbook is to be congratulated on the orderly arrangement of the essential information and the step-by-step procedure for removable partial denture construction which it contains. While one may presume it is intended for the use of Royal Canadian Dental Corps personnel as a manual, it most certainly would be useful to the dentist in private practice as well.

The book contains twelve chapters each dealing with a particular phase of the subject and arranged in logical sequence. A summary at the end of each chapter gives the main points discussed.

In this book, the writer has properly emphasized the importance of the "vitally essential preliminary phases" of this type of service, namely, the thorough assessment of mouth conditions, the preparation of the mouth and careful planning as prerequisites the dentist should observe for a beneficial result to the patient.

Too often, the design and specifications for removable partial dentures have been and are delegated to the dental technician who is expected to fabricate on a stone cast an appliance that will meet the mechanical and biological requirements of the patient. In my view, many partial prostheses have failed and have caused irreparable damage because the biological factors have been ignored or violated. When the dentist does little more than make an impression of the mouth and does not provide the dental technician with proper specifications, how can it be expected that good function will be restored and further breakdown of oral structures prevented?

The book is printed on good paper; the type is most readable and the illustrations are clearly reproduced.

Much of the detail usually contained in a text book covering this subject more fully has of necessity been abbreviated in this manual as it

is intended for the graduate dentist who has had some experience in practice. The essential steps in procedure from the examination of the patient to patient education are set out in a clear and comprehensive manner. If the dentist were to follow this system he would not only provide a better partial denture but in addition, would practise a preventive dentistry service with fewer disappointments to the patient and to himself.

There are a few minor points with which one might be in disagreement but I consider this handbook to be a worthwhile contribution to dental literature and should be a welcome addition to the dentist's office library.

R. J. Godfrey.

The Design and Construction of Removable Orthodontic Appliances 2nd Ed. Published by: John Wright & Sons Ltd., England. Prepared by: C. Philip Adams, B.D.S., F.D.S., D. Orth. Pages: 120. Price: \$3.00 approx. Fully illustrated.

The second edition of this text is essentially the same as the first edition with the exception of two new chapters on expansion and welding and an increased presentation on the use of screws to produce various tooth movements.

The mechanical principles of fixed and removable orthodontic appliances is discussed in chapter one.

The second chapter deals specifically with the design of removable appliances. The author points out that many of the failures with removable appliances result from trying to move too many teeth in different directions with a multiplicity of springs on one appliance. As can readily be appreciated, too few teeth are left for anchorage purposes and even more important, the unfortunate patient ends up with an uncomfortable complicated gadget. It is wise to break the treatment plan into a series of simple tooth movements using a separate appliance for each.

Wire-bending techniques and the design and construction of ingenious clasps and springs are presented in the next three chapters. Next, there follows the design of appliances to effect labio-

and bucco-lingual and mesiodistal tooth movement, and expansion of the dental arch.

An interesting chapter on intermaxillary and extra-oral traction makes one wonder if removable appliances have any limitations. However, the section on rotation and root movement of teeth pinpoints their glaring weakness.

The text has excellent photographs and dia-

grams which very clearly demonstrate the appliance designs and tooth movements being carried out. This manual would be useful to the undergraduate dental student and the dentist who desires to enlarge the scope of his dental services into the role of interceptive orthodontics. This book is replete with useful ideas for the average orthodontist.

Rowland D. Haryett.

THE ASSOCIATION

ANNUAL MEETING — MONTREAL, 1958

Board of Governors — October 22 - 25

Convention — October 26 - 29

Alberta Denturists' Bill Dies in Committee

After two and one-half days of hearings before the Private Bills Committee of the Alberta Legislature, a Bill to Incorporate the Public Denturists of Alberta was permitted to die in committee. The government is to set up a representative committee to study the whole subject during the coming summer. The purpose of the committee was stated to be the formulation of a suitable bill for introduction at the next session of the legislature. Proponents and opponents of the bill agreed to this action.

The Bill was designed to incorporate the Alberta Denturists Society, granting permission for its members to practise prosthetic dentistry directly for the public on presentation of a certificate of oral health signed by a duly qualified medical practitioner or dentist.

About 19 to 26 technicians organized as public denturists supported the bill. Opposition to the bill came from representative bodies of the dental profession and from

the Alberta Dental Laboratory Association which has a membership of 120 technicians.

Hearings on the bill were held April 2nd, 8th and 9th. Evidence was presented at some length by both sides, with questioning by members of the Legislature. Opposing the bill were representatives of the Canadian Dental Association, Alberta Dental Association, Faculty of Dentistry of the University of Alberta, and several individual dentists. These representatives made presentations and answered questions raised by members of the legislature.

Presentations were also made by proponents of the bill — Alberta Denturists Society, secretary of the National Dental Technicians Association (membership in four western provinces stated to be 121), and an individual technician. Each side was represented by legal counsel.

At the end of the hearings, the Minister of Health stated that obviously the bill as written was not acceptable to the committee and that it would be impossible to amend it suitably. He suggested that the bill be permitted to die in committee with the government giving an undertaking to call together a representative committee

during the summer to prepare a bill suitable for presentation at the next legislative session. After consultation, both sides agreed to this suggestion and the Private Bills Committee voted in agreement.

Two New Brunswick Dental Bills Die in Committee

Two bills related to the dental profession were introduced in the 1958 New Brunswick Legislature. The bills, both concerning individuals wishing in effect to practice dentistry without proper qualifications, were allowed to die in committee.

Bill No. 75 was entitled "Act to Allow G. Hartley Kindred and Ralph Leo Landers to Repair and Fix False Teeth and to Exempt Them from the Injunction Clause in the 'New Brunswick Dental Act 1953'".

Bill No. 119 was "An Act Authorizing Joseph Luc Alfred Savoie to Practice Dentistry".

Bill No. 75 represented the fourth occasion on which the two technicians named had presented bills in varying forms for the purpose of obtaining permission to practice prosthetic dentistry in some form. Both men have court injunctions against them for illegal practice of dentistry.

Mr. Savoie is a graduate in dentistry of the University of Geneva, Switzerland. He has been refused registration in New Brunswick because he has not met the requirements, not having graduated from an approved dental school. He sought registration by act of the Legislature.

Hearings before the Corporations Committee took place on April 24th. All parties were represented by legal counsel. Both bills were not reported out of committee.

Four Dentists Elected to Commons

According to information received to date, four members of the dental profession were successful in the federal election on March 31st:

Dr. O. H. Phillips (re-elected), Alberton, P.E.I.; Dr. Charles Richard, Ste-Anne-de-la-Pocatière, P.Q.; Dr. Perreault Larue, Baie Comeau, P.Q.; Dr. Rodolphe Leduc, Maniwaki, P.Q.

Kellogg Foundation Report

In the Dentistry section of its annual report for 1957, the Kellogg Foundation highlights the increasing importance of dental care in health services. The report states that public recognition of the importance of dental care and a corresponding increase in the popular demand for dental services make it more and more difficult for the profession to carry the load.

The dental manpower situation may become worse instead of better during the next decade and the Foundation's attack will be chiefly in the field of dental education. Funds have been advanced for educational studies in Canada as well as the United States.

As the dental schools increase their facilities, the need for qualified teachers, research workers, and specialists will become increasingly critical. To help meet this need the Foundation has assisted many universities in North America in the expansion of graduate education.

Grants from the Foundation have been used in support of a series of teacher training conferences conducted by Canadian dental schools. Another Canadian program assisted by the Foundation has provided graduate education fellowships to twenty younger faculty members of the five schools and eight short-term faculty fellowships for post-graduate courses in the U.S.

Programs Assisted in Canadian Dentistry

- Dental Faculty Fellowships—Dalhousie University, Halifax for further training of faculty through study in U.S.
- Dental Schools Consultation and Accreditation — Canadian Dental Association — for development of a program of accreditation and consultation services for Canadian dental schools.
- Conferences on Dental Teaching—Canadian Dental Association—for conferences to develop in-service education for Canadian faculties.
- Regional Dental Education — Dalhousie University — to strengthen and enlarge the only dental school in the Maritime region.

**Colonel George L. Cameron,
Association Past President, Dies**

One of Canada's best known and most beloved dentists, Dr. George Lynch Cameron, died in Florida on Tuesday, April 29th, 1958, just a few days prior to his 74th birthday.

He was born in Nelson, Manitoba, on May 7th, 1884, the son of a minister. He graduated in 1908 from McGill University and returned to the west where he commenced practice in Swift Current, Saskatchewan. Dr. and Mrs. Cameron became parents of four children, one of whom is a dentist, Dr. Robert B. Cameron of Edmonton. Two sons became physicians and their daughter, the wife of a physician.

Dr. Cameron was a past-president of the Swift Current Dental Society, the Saskatchewan College of Dental Surgeons and the Western Canada Dental Society.

He was granted the highest elective post within the gift of Canadian dentistry in 1934 when he was elevated to the position of president of the Canadian Dental Association.

Dr. Cameron was made an honorary life member of the Saskatchewan College of Dental Surgeons in 1950. He was also a Fellow of the International College of Dentists.

While residing in Swift Current he was chairman of the Hospital, Public School, and Collegiate Boards. Also he was a councillor and alderman, an executive member of the Provincial and Dominion Liberal Associations, and a past grand master of the Independent Order of Odd Fellows.

At the time of his death, Dr. Cameron was a resident of Ottawa where he held memberships in St. Andrew's Presbyterian Church, and the Royal Ottawa Golf Club and the Rideau Curling Club.

Perhaps, however, Dr. Cameron will best be remembered for his services to the Canadian Armed Forces in both World Wars. On February 10th, 1911, he was appointed a lieutenant with the 27th Saskatchewan Light Horse and was promoted to captain on February 26th, 1912. During the First World War he served with the 9th Canadian Mounted Rifles, Canadian Expeditionary Force and obtained his majority on November 23rd, 1915.

While overseas he served as Second-in-Command of the 1st Canadian Infantry Battalion and Acting Commanding Officer. Seriously wounded on April 25th, 1918, he was invalided back to Canada on August 12th, 1919, and was appointed Assistant-Director of Dental Services of Military District No. 12, Saskatchewan, and on November 15th, 1919, was appointed to the



same position in Military District No. 13, Alberta.

He was demobilized on December 31st, 1920. On April 15th, 1921, he was appointed Major and Second-in-Command of the 14 Canadian Light Horse. On April 11th, two years later, he was transferred to the 2nd Reserve Regiment and on December 15th, 1936, to Reserve Regiment Depot.

At the beginning of the Second World War, Dr. Cameron was appointed District Dental Officer, M.D. 12, Regina, Saskatchewan, in the rank of Lt. Colonel, September 1st, 1939. On March 27th, 1941, he was posted to the Canadian Dental Corps Headquarters, Ottawa, and was appointed Deputy Director, Dental Services. On January 7th, 1943, he was promoted to the rank of Colonel.

Colonel Cameron became Deputy Director-General Dental Services on February 1st, 1944.

On November 8th, 1945, Colonel Cameron retired. He was appointed Honorary Colonel Commandant of the Royal Canadian Dental Corps on October 26th, 1954.

In 1918 Colonel Cameron was decorated with the Distinguished Service Order and was Mentioned in Despatches in the same year. 1929 saw conferred on him the Volunteer Officers' Decoration and in 1946 he was honoured with the Order of the British Empire.

Colonel Cameron is survived by his wife and four children.

C.D.A. Retirement Savings Plan Speakers for Local Societies

The Retirement Savings Plan, whereby contributions may be deducted in making income tax returns, was established by the Canadian Dental Association in December, 1957. An explanatory booklet was issued at that time. A considerable number of members took immediate advantage in order to secure tax deduction for 1957. The Royal Trust Company is trustee of the funds established under the plan.

In order that the membership may be better informed about the advantageous nature of the plan, executive officers of the Royal Trust Company have consented to address local dental societies across Canada. This service will be offered by the trust company and it is hoped that officers of societies will take advantage of this opportunity.

The addresses by trust company men are to be informative and not to be classified simply as salesmanship. In the opinion of the Association the Retirement Savings Plan merits serious consideration of members.

Ontario Board Purchases Building

On April 30th, last, the Royal College of Dental Surgeons of Ontario purchased the building immediately adjacent to C.D.A. Headquarters.

Renovations are to be expected to be completed in time for early autumn occupancy. The building is a three-storey residential structure which, when alterations are completed, will represent an investment of approximately \$100,000.

Official Opening at Dalhousie

Official opening ceremonies of the new Dental Building at Dalhousie University will be held September 25th and 26th, 1958.

Features of the first day will be a special convocation, official opening ceremonies, and tours through the new school. For the benefit of dentists in attendance, a clinical program is planned for the second day.

Reduced Fares to Annual Meeting

Canadian railways and Trans-Canada Air Lines are offering reduced rates for those travelling to Montreal for the C.D.A. Annual Meeting in October.

Identification certificates to be presented when purchasing rail or air tickets may be obtained by writing to Secretary, Canadian Dental Association, 234 St. George Street, Toronto 5.

Railways — Authorized dates for the start of the journey to Montreal:

From stations on Western lines — all points west of Fort William and Armstrong, Ontario: October 16 to 24 inclusive.

From stations on Eastern lines — Fort William and Armstrong, Ontario, and all points east thereof, except Newfoundland: October 18 to 26 inclusive.

From stations in Newfoundland: October 15 to 25 inclusive.

T.C.A. — From any T.C.A. port in Canada. Travel must commence within 15 days prior to the last day (October 29) of the Convention.

One-way tickets for travel from Montreal must be used within 10 days after October 29.

Complete details are obtainable from the railways and T.C.A. when planning your itinerary.

Recent C.D.A. Publications

Tomorrow's Dentistry—Your Responsibility—required reading for every dentist in Canada is this timely message from your Public Relations Committee. Single copies of this pamphlet are available at C.D.A. Headquarters at no charge.

Protect His Precious Teeth—reprint of a recent magazine article by Elizabeth Chant Robertson M.D. This pamphlet presents dental health education material of special interest to expectant mothers and mothers of young children. From Headquarters, \$1.00 per hundred.

"Care Following Dental Surgery"—a leaflet to give to patients as a supplement to the dentist's personal instructions after oral surgery. \$1.00 per hundred.

"Hospital Dental Services and Dental Internships"—a 12 page booklet outlining basic standards for certification of hos-

pital dental services and requirements for approved dental internships. Provides a guide for hospital administrators, chiefs of hospital dental services, and those interested in establishment of such services. A few copies are available at Headquarters for those concerned with this subject.

"Public Relations Plaques" — approximately 10" x 6¾", beautifully gold lettered on shiny black surface and mounted on masonite-type backing; equipped with wall hanger and desk easel. Plaques bear the inscription "You are invited to discuss frankly my services or my fees. The best dental service is based on mutual understanding". Approved by the Public Relations Committee for use in dental offices. \$2.00 each.

Construction Starts at Toronto

Visitors to the site have been impressed with the speed of operations to get the new dental building at Toronto underway.

The project is expected to cost about \$6,000,000, including \$700,000 for land, \$1,000,000 for scientific and clinical equipment, \$900,000 for laboratory and office furnishings and equipment, architects' fees and other expenses.

Occupancy of the five-story brick building is expected by the fall of 1959. Ultimate undergraduate enrolment of 725 is provided for, compared with 417 this year.

First Contract For Laboratory Technicians

"A contract affecting 140 dental technicians was signed in Toronto yesterday between the International Jewelry Workers' Union and the Dental Laboratories Association of Ontario.

"L. H. Rosen, IJWU international representative, said last night the contract is the first for employees of seven major Toronto dental laboratories including Shaw Laboratories Ltd., largest firm of its kind in Canada.

"The contract provides for the preferential union shop; 40-hour, five day week; health and welfare plan, including weekly indemnity; and \$5 weekly pay increase.

"Included is a classification reopener clause for April 1, 1959, at which time

classification grades and salary minimum will be drawn up.

"The union also hopes to provide a surgical benefit for members and their families, payment for medical visits and group life insurance.

"Signing for Local 43, Dental Technicians' Union, was Mr. Rosen, while F. J. Bryan, executive director of the Dental Laboratories' Association of Ontario, signed for the employers."

Globe and Mail — April 4, 1958

News Clipping

Gregory Clark comments on health insurance in his column "The Packsack":

"It stands to reason that if we are going to have national health insurance, we are all going to have to line up periodically for a checkup. Surely our governments are not going to undertake to cherish us in sickness and in health without making sure we are taking care of ourselves. I should imagine that within ten years, we will all be getting little tickets ordering us to report to the nearest health centre for our semi-annual X-Ray, blood pressure tests and various more intimate analyses.

"It is not altogether easy to buy life insurance. You have to go through exhaustive physical examinations. No doubt it will be the same with national health insurance. It is ridiculous to suppose that the government will take care of a man who goes on a hunting trip and gets a heart attack, especially after he was instructed, on his last semi-annual checkup at the government health centre, not to go on any hunting trips or otherwise exert himself unduly. If a man goes on a convention to a distant city and starts whooping it up in the Malamute saloon and catches pneumonia as the result of being thrown out in the snow by the bouncer, is the government going to take care of him, in view of the fact that at his last semi-annual checkup, he was told never to take a drink again?

"If national health insurance means the government is going to look after us whether we take care of ourselves or not, that is a large order. It is not the habit of governments to deal with us in such easy fashion. It is more likely that we will be taken over body and bristles, the way the income tax has taken over our private finances. Is a man's body more private than his income? Ten years will tell."

—Family Herald—Jan. 30, 1958

COMMITTEES AND COUNCILS

Dental Education

The activities of the Council on Dental Education culminate each year in the annual meeting. The recent meeting of the Council was unique in that it was attended not only by members of the Council, but also by representatives from the six dental schools, which includes the new dental school at the University of Manitoba. Furthermore, three of the schools, namely, Manitoba, Alberta and Montreal were represented by newly-appointed senior administrative officers. Congratulations and cordial greetings were extended to: Dean J. W. Neilson of Manitoba; Dean-elect H.R. McLean of Alberta; and Associate Dean J. P. Lussier, University of Montreal.

During the meeting concern was expressed over the reduced number of applications for admission to the Canadian faculties of dentistry last fall. The Council was advised that among the steps taken in a broad recruitment programme designed to remedy this situation was the preparation of a statement by the Public Relations Committee of the Canadian Dental Association entitled: "Tomorrow's Dentistry — Your Responsibility". This statement had been distributed to every member of the profession in Canada. Furthermore, at this meeting the Council approved the content of the brochure entitled: "A Career in Dentistry", and recommended that it be printed immediately and made available to prospective students and guidance officers. It was also noted that a full-page statement on dentistry as a career had been carried in the recent edition of Canadian High News. This message had been prepared by members of the profession, and sponsored by a group of dental supply houses. Canadian High News reaches both teachers and students in secondary schools across Canada.

The Council received a report from one of its sub-committees relative to the establishment of new teaching facilities. When the new facilities at the University of Manitoba, and the augmented facilities at Dalhousie University, and the University of Toronto are fully enrolled, the overall number of freshman students admitted each year will rise from 200 to approximately 300.

During the past six years the Council has surveyed each of the five Canadian dental schools on three separate occasions. Full accreditation of the five schools by the Council was followed by similar recognition by the Council on Dental Education of the American Dental Association. At the recent meeting of the Council the following policy was adopted in relation to future surveys of the schools.

- (1) in 1959 three schools will receive an informal visit from the advisor to the council;
- (2) in 1960 the three other schools will be similarly visited;
- (3) after 1960 visits will be made on a biennial basis, excepting those years in which a formal survey is carried out;
- (4) in 1961 it is planned to conduct a formal general survey of all the Canadian dental schools, and thereafter a similar survey will be made every five years.

Representatives from the dental schools attending the meeting expressed the view that the original survey had been of tremendous assistance to the schools. The universities concerned had cooperated to the full in respect to recommendations made, and in general the effect on dental education has been very stimulating and beneficial.

For some years the Council has been studying the merits of an aptitude testing programme for Canadian dental students. A careful study of the plan which

has been in effect in the United States for the past ten years has been made with the view to adapting it to Canadian schools. However, it was decided to study further the possibility of developing an aptitude testing programme based on secondary school education in Canada.

The training of dental assistants in the dental schools was given consideration. It was revealed that courses of training for assistants have been established in some parts of the country on a commercial basis. The Council expressed the view that because of professional considerations it was desirable that such training programmes be conducted within the profession, and that students of dentistry should have the opportunity of learning to work with the dental assistants. Therefore, the Council favours the establishment of a course for dental assistants under the aegis of the profession, and wherever possible within the dental faculty.

A sub-committee of the Council under the chairmanship of Dr. J. H. Johnson

completed a three-year survey and study of the teaching of anaesthesia. This committee held a conference on anaesthesia early in 1958, and the report which emanated from this conference was adopted by the Council. The report provides a valuable guide for the dental schools in the teaching of both local and general anaesthesia. A similar study on the subject of the teaching of practice management has been made under the joint chairmanship of Drs. J. Kreutzer and J. Abraham. Once again the report of the committee representing the five Canadian dental schools has provided the Council with an excellent statement on the teaching of this important subject.

One of the most important features of these two studies has been the discussion of these topics by members of the staffs of the dental schools, and the indirect benefits which will accrue to dental education in Canada.

Roy G. Ellis, Chairman

THE CORPS

The Corps has received with deep regret news of the sudden death of Colonel George Lynch Cameron, D.S.O., O.B.E., V.D., (Retired) Honorary Colonel Commandant of the Royal Canadian Dental Corps.

General Efficiency Competition

Lt.-Col. R. B. Jackson of the staff of the Director General of Dental Services has completed his inspection of the Militia units entered in the General Efficiency Competition for Militia Dental Units. The results of the competition will be announced in the early fall following completion and assessment of the Summer Training Program.

Major R. A. Fell attended a course in Periodontia at Tufts University. Major Fell is now employed at RCAF Station, Chatham, N.B.

Captain W. K. Dickie attended a course in Exodontia at the United States Naval Dental School at Bethesda, Maryland. Captain Dickie is now employed at H.M.C.S. "Stadacona", Halifax, N.S.

The following officers have been released from the RCDC (R):

Captain J. W. M. Bradey.
Captain D. E. Charlton
Captain T. S. Kline

Captain Bradey enrolled under the ROTP plan, graduating from the University of Toronto in 1955. Following his release, Captain Bradey will be associated with his father in civilian practice in Parry Sound, Ontario.

Captain Charlton, a native of Australia, served with the Royal Australian Air Force 1943-45 and the Australian Army 1951-1953. He received a B.D.S. from the University of Sidney in 1949 and a D.D.S. from Dalhousie University in 1954, following attendance of one year as a subsidized student to qualify for service in the RCDC (R). Following his release Captain Charlton will return to Australia to engage in civilian practice.

Captain Kline was born and educated in Edmonton, graduating from the University of Alberta in 1955, having been enrolled under the ROTP plan in 1952. Following his release, Captain Kline will retain his association with the Corps as a member of the Supplementary Reserve.

THE PROVINCES

ALBERTA

Alberta Dental Association

Dentists from many Alberta centres were in Edmonton recently to attend the business meeting of the Alberta Dental Association and to look at a plan to allow their patients to pay on credit, and extend their fields of public service.

The credit scheme would give patients unable to pay the dental bill, time to make payments after completion of service. This plan will be discussed further at later meetings. A similar plan is in partial operation in Saskatchewan.

The dentists re-affirmed their view that fluoridation of community water supplies is "a proven dental health measure". Noting four Alberta communities have now voted in favour of fluoridation, members thought it "only a matter of time", before other communities realized the importance of fluoridation.

It was agreed to set up a course for dental assistants on a province-wide scale. Lectures will be given in Edmonton, Calgary and Red Deer, commencing in September. The courses are to last one year, with a two hour lecture each week by dentists.

Members also agreed to establish an Alberta division of the Society of Dentistry for Children. Sponsored by the Alberta Dental Association, the division's purpose will be to study all phases of children's dentistry.

After viewing a film on the subject, the dentists received favourably a plan to establish a dental clinic for the underprivileged. The dentists, who would donate time for treatment, felt a clinic would be of great benefit.

There was agreement to expand the association's benevolent fund through an insurance plan in case of illness or death. Also reviewed was the general relationship of dentists engaged in hospital services and discussed "with hope" were plans for expansion of the school of dentistry at the University of Alberta.

Dr. Lorne K. Brooks, of Calgary, was elected president. Dr. J. Young was elected to the executive of the association. Continuing members of the board are: Dr. A. Grey, Lethbridge; Dr. L. Oatway, Red Deer;

Dr. M. Woronuk, Fairview; Dr. V. Lloyd, Edmonton, and Dr. G. Swann of Calgary. Retiring President is Dr. R. Campbell of Edmonton. Permanent secretary-registrar is Dr. A. Rooney of Edmonton.

BRITISH COLUMBIA

Island Societies Meet in Victoria

A combined Island Societies' meeting took place in the Empress Hotel Ballroom on Saturday, April 12. Fifty-two members and guests sat down to luncheon during which a short business meeting was held.

Distinguished guests were: Dr. H. M. Worth, radiologist; Dr. V. P. Gilbert, president of the Upper Island Dental Society; Dr. G. F. Homer, president of the Victoria and District Medical Society; and Dr. Ross Upton, executive secretary of the British Columbia Dental Association. Also welcomed were thirteen members of the Upper Island Dental Society and medical radiologists practising in Victoria.

Dr. Upton, who was introduced by Dr. Gilbert, gave a short address on dental ethics, which was much appreciated. In expressing thanks, Dr. T. W. James, president of the Victoria group, mentioned the speaker's tactful approach to a difficult subject.

After an introduction by Dr. E. N. Screech, Dr. H. M. Worth lectured on "Some Aspects of Radiographic Interpretation", and held the audience spell-bound by his erudite exposition. A brief survey of normal histology of the dental tissues was given, after which Dr. Worth dealt with the recognition of abnormal radiological manifestations. Particular emphasis was laid upon the identification of periapical osteo-fibrosis in vital teeth which demonstrates the necessity for careful clinical as well as radiological examination. Tumors of the jaws, both malignant and benign, were illustrated by dozens of beautiful slides. In the case of carcinomata and sarcomata, early reference for treatment was stressed as a life-saving measure. The differential diagnosis was also discussed.

Dr. Worth is not only an authority in his field, but he is also a skillful lecturer.

He gave a polished performance and the group felt honoured by his presence. Adequate thanks were tendered by Dr. W. W. McLuhan.

In the evening a very successful social period, convened by Dr. and Mrs. Bernhard Kjekstad, was held at the Oak Bay Golf Club where cocktails and dinner were enjoyed by ninety members and guests. Dancing and bridge followed until midnight, and all agreed that this should be made an annual event.

Kootenay Dental Society

Dr. Frank Fergie of Cranbrook was elected president of the Kootenay Society at its semi-annual meeting held recently. Other officers are: Dr. R. A. Walley, Castle-gar, vice-president, and Dr. Bauman, Cranbrook, secretary-treasurer. Past-president is Dr. M. G. Martin of Trail.

Feature was a clinic on "Modern Procedures of Crown and Bridge Work" by Dr. C. W. Olsen of Spokane, who supplemented his address with slides and a working model. Dr. William Gregorak of Rossland, representative of the B.C. College of Dental Surgeons, reported for the college on various matters affecting dentistry.

An engraved desk set was presented to Dr. C. E. Bradshaw at a banquet held in Nelson Golf and Country Club. Now retired, Dr. Bradshaw organized the association. The presentation was made by Dr. T. H. Bourque. A social evening including a spelling bee, followed.

Nelson dentists formed a committee to sponsor the meeting. Wives of the 21 dentists who attended were entertained at afternoon tea in Dr. Bourque's home.

Vancouver and District Dental Society

A cocktail party preceded the final dinner meeting on May 5 with the president, Dr. John Ryan, in the chair.

As customary, a non-dental speaker was enjoyed. Mr. Ron Keith of the Canadian Pacific Airlines gave a pithy half-hour talk which revealed many technical details with a glimpse into air travel of the future. It was predicted that the air traveller would get more for his dollar as the years go by.

At the business session the executive was empowered to invest \$4,000 of the society's surplus funds in bonds for the proposed new dental headquarters.

It was announced that the Post Payment Plan will begin to function on June 1, with a new committee in charge, headed by Dr. Matt Waterman.

Out of 348 dentists practising in the Vancouver area, 285 or 82 per cent are members in good standing of the society.

The new executive will be composed of these officers: President — Dr. Max Nacht; Past President — Dr. J. G. Ryan; President-elect — Dr. O. F. Wright; Secretary-Treasurer — Dr. J. M. Carefoot; and Directors — Drs. W. R. Scott, W. E. Shaw, B. M. Plumb and W. L. Elliot.

D. H. M.

ONTARIO

U. of T. Dental Alumni

Through the generous contributions of the University of Toronto Dental Alumni members, the Alumni is creating a student loan fund. Loans will be repayable after graduation with a low rate of interest which also starts after graduation. All the details have not been consummated at this time. More news about this will be published later.

Faculty Alumni Day which is getting bigger and better every year is scheduled for Friday, November 28. This is free to all Alumni members. The program is almost completed to mark the date on your appointment book now.

Congratulations are in order for Herbert Katzman and William Dutka. These excellent students were the recipients of the Dental Bursaries. Each bursary is worth two hundred dollars.

If you are an Alumni member, you have received issue of the Varsity Graduate from the University of Toronto. This interesting booklet contains news from the faculties. The Alumni would appreciate news from members across Canada. This does not have to pertain to Dentistry. Send your letters to Dr. Ernest Rollaston, 80 King Street West, Toronto, Ontario.

Peterborough and District Dental Society

The third meeting of the Peterborough and District Dental Society was held on April 30th, 1958, at Thelgar Lodge.

Dr. Glen McCartney, one of our members, was the speaker and his subject was "Hypnosis and Its Place in Dentistry".

The executive was elected as follows: President, Dr. Cameron A. Craig; Vice-President, Dr. Robert Nelson; Secretary-Treasurer, Dr. Ralph Green, all of Peterborough.

R. N.

QUEBEC

Three Rivers Dental Society

Dr. Guy Boisclair was elected President of Three Rivers Dental Society. Other members elected are as follows: Dr. Jean Therrien, Shawinigan, first vice-president; Dr. L. Bourget, Cap-de-la-Madeleine, second vice-president; Dr. Vincent Dontigny, Three Rivers, treasurer, and Dr. Jean Pruneau, Three Rivers, secretary.

The elected directors are: Drs. Antonio Jacob, Joseph Despres, L. Ringuette, Richard Poirier, and R. Picotte.

Next year's provincial convention will be held in Three Rivers with the newly elected executive responsible for its organization.

Mount Royal Dental Society

The first annual D. Prescott Mowry Lecture took place on Monday, April 14th, 1958, at the Montreal General Hospital, under the auspices of the Mount Royal Dental Society. President Dr. A. W. Bazerman was in the chair.

The guest speaker was Dr. B. O. A. Thomas of Palo Alto, California. Dr. Thomas is Clinical Professor of Periodontics, College of Physicians and Surgeons, San Francisco. He is also a Diplomat and Director of the American Board of Periodontology.

Dr. Gerald Franklin, Professor of Orthodontics at McGill University, in introducing the lecture, paid tribute to the memory of the late Dean D. Prescott Mowry. He stated that the members of the dental profession in Montreal, in common with their confreres in the fields of periodontology and dental education, have felt very deeply the death three years ago of Dr. D. Prescott Mowry, Dean of the Faculty of Dentistry, McGill University, whose memory this annual lecture is to perpetuate. Dr. Philip Gitnick then introduced the guest speaker.

Dr. Thomas, whose chosen topic was "Occlusion and Periodontal Disease", pointed out that occlusion did not occur overnight but had developed in a long, evolutionary process and that the human masticatory apparatus is the most complicated in the entire animal world. He showed that by careful visual examination, mounted models, and carbon paper tracing, one could determine how far a given occlusion falls short of the ideal, but he cautioned against interceptive occlusal correction to attain a balanced occlusion, such as is known in prosthetics. He also warned against selective grinding in cases where the occlusal abnormality is too gross to be corrected.

He added that in many cases there is no disturbance in supporting tissues in spite of occlusal traumatism. However, interceptive treatment is indicated, where there is pain, radiographic evidence of bone destruction and clinical mobility, mandibular slide from centric into an abnormal position, and loss of supporting structures. Dr. Thomas stated that 90 per cent of all cases can be relieved by removing centric interference rather than by equilibration in all excursions, since few people go into lateral position by more than 1 mm. The lecture was well illustrated by Kodachrome slides.

Dr. D. Muhlstock thanked the guest speaker.

C. G. B.

Montreal Endodontia Society

On April 18, 1958, at the Reform Club, the Montreal Endodontia Society held its final meeting of the year. Dr. George Stewart, president of the American Association of Endodontists, addressed the group on various aspects of endodontics. He drew to the attention of the group several new medicaments including an improved root canal sealer and described work that he has been doing in the field of anti-histamines in relation to root surgery.

Elections for the coming year were held and the slate of officers is as follows: President, Dr. D. Munro; Vice-President, Dr. H. Israel; and Secretary-Treasurer, Dr. G. Le Francois.

F. V.

Montreal Dental Club

The regular monthly meeting of the Montreal Dental Club took place on Monday, April 28th, at the Queens Hotel.

Voted in as a new member was Dr. Harold Kennedy, a McGill Graduate of 1952.

Dr. H. Boyles introduced the guest speaker of the evening, Dr. James T. McGuin, who talked very capably on Partial Dentures. Dr. McGuin stated that over the past years, there has been an increased demand for partial denture service, due mainly to root canal therapy, periodontal treatment and occlusal equilibration.

Dr. McGuin expressed his belief that partial denture design should be approached from the periodontist's viewpoint, taking into consideration:—

- occlusal disharmonies — study models are a necessity, and any occlusal disharmonies discovered should be corrected before beginning partial denture service.
- vertical stress — stress must be applied along the long axis of the supporting teeth to maintain sound bone

and periodontal structures.

- c) lateral stress — clasp arms should be as close to the gingival border as possible to decrease leverage. If tooth contour does not permit, then teeth should be modified by the use of discs or inlays or crowns.
- d) inclined planes — no indirect retainers or rests should be placed on inclined planes of teeth in order to prevent a wedging effect of the abutment teeth. Correct any inclined planes through inlay work to bring stress along the long axis of the teeth.

If these steps are not considered, breakdown of supporting structures will occur with subsequent loss of abutment teeth over a period of time.

Dr. McGuin substantiated his lecture with excellent coloured slides and commentary.

Following an interesting question period, Dr. McGuin was thanked on behalf of the Montreal Dental Club by Dr. W. C. Bushell.
W. D. S.

SASKATCHEWAN

Emergency Service

A new public medical service based on emergency medical and dental needs by Reginans, began on May 1st under a joint program of the Regina medical and dental societies.

The service will be similar to an emergency telephone call for a fire, and will provide a doctor or dentist always on call to assist patients.

The new program was set up by a committee under the chairmanship of Dr. N. H. Smith of the Regina Medical Society.

Dr. Smith said that Reginans should first call their own physicians and dentists, if they need attention. If, however, family doctors cannot be reached, the emergency telephone number should be dialed.

Doctors and dentists will be available 24 hours of the day to answer calls and give assistance.

IN MEMORIAM

Fred C. Husband — Dr. Fred C. Husband of Toronto, died on May 1st, 1958.

Dr. Husband received his professional training at the Royal College of Dental Surgeons of Ontario.

During the 53 years he practised in Toronto, Dr. Husband undertook many research projects, including a study of the relationship between dental cavities and diet.

Dr. Husband was a past-president of the Toronto Dental Society. He was a member of the public dental health committee of the Ontario Dental Association for more than 25 years. Also a life member of the Toronto Canoe Club and a member of the National Scarboro Golf, and Chattan clubs.

Surviving are his wife, Margaret, two daughters, a sister and a brother.

J. Gordon MacKenzie — Dr. J. Gordon MacKenzie of Sarnia, Ontario, died in April, 1958. He was 57 years old.

Dr. MacKenzie was a native of Sarnia. He graduated from the Faculty of Dentistry, University of Toronto in 1925 and practised in Windsor and Kirkland Lake. He served overseas with the Canadian Army Dental Corps in the Second World War.

Surviving are his wife, Christina, a daughter, Jennifer, and his mother.

Alphonse J. Décarie — Dr. Alphonse J. Décarie of Notre-Dame-de-Grâce, died on April 11, 1958, in his 57th year.

A native of Montreal, Dr. Décarie studied at St. Marie College and the University of Montreal.

Throughout the war he served with the R.C.D.C. and was stationed at many points in Canada. He returned to civilian practice with the rank of Captain. Dr. Décarie was a member of the Lions Club.

Dr. Décarie is survived by his wife, the former Marie Lafleur, and three sisters, Germaine, Françoise and Gabrielle.

Frank S. Spiers — Dr. Frank S. Spiers of Barrie, Ontario, died suddenly on April 10th, while visiting his daughter Jean in Washington. He was 74.

Dr. Spiers was born in Alexander, Manitoba. He graduated from the Royal College of Dental Surgeons of Ontario in 1914.

Dr. Spiers, who had been a resident of Barrie since 1941 retired from active practice early in 1953. He was a member of Corinthian Lodge, AF & AM. He was an active bowler with the Barrie Lawn Bowling Club and was president of the club for several years.

Surviving are his daughter, Jean, and son, Robert, also one brother, Samuel, and one sister, Mrs. W. Ortt, and four grandchildren.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th — 29th
1959	Halifax, Nova Scotia	June 21st — 28th
1960	Ottawa, Ontario	Sept. 25th — 28th
1961	Saskatoon, Saskatchewan	June 25th — 28th

1967	Toronto, Ontario <i>(Centennial Celebration of Dentistry in Ontario)</i>	May
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FUTURE EVENTS

Date	Function	Location	Officer	Address
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia.	Mrs. M. Kolb, Secretary	4001 Spruce St., Philadelphia 2, Penna.
July 20-23, 1958	52nd Annual Session West Virginia State Dental Society	Greenbrier Hotel, White Sulphur Springs, W. Va.	Dr. T. A. Edwards, Chairman,	822 S. Kanawha St. Beckley, West Virginia.
Aug. 27-Sept. 4, 1958	46th Annual Meeting International Dental Federation.	Brussels, Belgium	Dr. M. Joachim, Secretary	67 Rue de Treves, Bruxelles, Belg.
Sept. 1-3, 1958	Saskatchewan Dental Association Convention and Refresher Course in Oral Surgery	Regina, Sask.	Dr. G. W. Schwann, Registrar	613 McCallum-Hill Bldg., Regina, Sask.
Sept. 14, 15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon	500 Albert St., Kingston, Ont.
Sept. 25 & 26, 1958	Official Opening of New Dental Building	Dalhousie University, Halifax, N.S.	Dean J. D. McLean,	Dental Bldg., Dalhousie Univ., Halifax, N.S.
Oct. 6-10, 1958	Special Participation Course—Periodontology	Tufts University, Boston, Mass.	Director of Graduate & Post-graduate Studies,	Tufts University School of Dental Medicine, 163 Harrison Ave., Boston, Mass.
Nov. 1, 1958	Annual Meeting—New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.
Nov. 6, 7, 8, 1958	American Academy of Periodontology Annual Meeting.	Baker Hotel, Dallas, Texas.	Dr. H. A. Hartman, Chairman	4187 Pearl Road, Cleveland 9, Ohio.
Nov. 7-8, 1958	Meeting of American Academy of Gold Foil Operators	Dallas, Texas	Dr. C. C. Latham, Secretary	P.O. Box 266, Coronado 18, California.
Dec. 8-12, 1958	Greater New York Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.,	Room 106A, Hotel Statler New York 1, N.Y.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Les échecs de l'anesthésie locale et régionale (Spix) dans l'insensibilité de la pulpe

par M. DORIER (Genève)

En pratiquant l'anesthésie loco-régionale dans notre spécialité, nous sommes en face de 2 problèmes:

1. *L'anesthésie de la dentine et de la pulpe;*
2. *L'anesthésie chirurgicale.*

Ces 2 problèmes engendrent 2 techniques différentes et peuvent être résolus à notre satisfaction, grâce surtout à l'efficacité des anesthésiques actuels.

Il ne sera question ici que de l'anesthésie de la dentine et de la pulpe parce que quelquefois elle est plus difficile à obtenir, elle demande plus de précision et elle est plus fréquemment utilisée, actuellement, face à l'hypersensibilité croissante des jeunes patients spécialement.

Rarement, il est vrai, avec les anesthésiques actuels, nous n'arrivons pas à obtenir une anesthésie suffisante de la pulpe en vue d'un fraisage indolore de la dentine.

Il y a cependant des échecs quelquefois et il nous a paru utile de faire un tour d'horizon dans la littérature actuelle, afin d'y rechercher les causes éventuelles et les moyens d'y remédier.

Premièrement nous avons constaté, après expérimentation, qu'on peut obtenir une insensibilité pulpaire au moyen des seules anesthésies locales si elles sont bien dirigées, exception faite des molaires inférieures. Pour ces dents en effet, l'anesthésie à l'épine de Spix est parfois nécessaire, surtout si l'on doit travailler sur plusieurs dents en même temps.

Nous ne parlerons donc que de ces anesthésies là.

Explications les plus fréquentes des causes d'échecs de l'anesthésie régionale au maxillaire inférieur lors de l'insensibilité pulpaire

1. Mauvaise diffusion de l'anesthésique;

2. La nature et la concentration de l'agent anesthésique, ainsi que sa teneur en adrénaline ou succédané ne sont pas appropriés;

3. La présence d'une innervation supplémentaire, non atteinte par l'injection à l'épine de Spix, maintiendrait la sensibilité pulpaire.

Deux sources principales de nerfs supplémentaires peuvent être invoquées.

a) Un nerf cutané, issu de la 3^{me} ou 4^{me} branche cervicale superficielle entre dans la face linguale de la mandibule par un petit foramen pas toujours présent. S'il y a échec de l'anesthésie pulpaire lors d'une injection spigienne, une injection complémentaire linguale entre les deux prémolaires peut bloquer ce rameau avec succès.

b) Possibilité d'innervation supplémentaire par une branche du nerf mylo-hyoïdien qui pénètre par le foramen dentaire inférieur dans le corps du maxillaire. Comme le nerf mylohyoïdien se détache du nerf dentaire avant son entrée dans la fente mandibulaire, une deuxième injection à l'épine de Spix, un peu au-dessus, complète l'anesthésie. Une injection complémentaire au trou mentonnier permet également son blocage.

Réalité ou pas réalité de l'influence de ces innervations supplémentaires

La réponse pratique nous prouve souvent l'utilité des injections complémentaires.

1. Une théorie admet que l'injection spigienne n'atteint que les fibres externes du nerf dentaire inférieur, d'où nécessité d'une deuxième injection.

2. L'erreur de technique est la cause la plus fréquente d'échec. On a souvent cru que la paresthésie de la lèvre inférieure était un signe positif de la réussite de l'anesthésie à l'épine de Spix. Ce signe est suffisant pour indiquer que l'anesthésie est adéquate pour les besoins de la chirurgie, mais insuffisante pour l'insensibilité de la dentine et de la pulpe. C'est donc un échec partiel.

Pour qu'une anesthésie tronculaire soit réussie au maxillaire inférieur, la paresthésie ne doit pas affecter seulement la

lèvre, mais aussi la commissure et la peau du menton du côté correspondant. Alors seulement l'anesthésie pulpaire est profonde, même dans les cas d'inflammation de la pulpe dans une dentine hypersensible.

Très souvent donc les conditions topographiques sont parmi les causes d'insuccès. Il faut introduire l'aiguille tout près du tronc nerveux. La marge d'erreur est plus étroite que l'on pense. Evidemment la topographie de l'entrée du nerf dans le canal est très variable et il peut arriver au meilleur d'entre nous de ne pas atteindre le nerf à la première tentative.

3. L'échec comme aussi l'extension inhabituelle de l'anesthésie à la suite d'une seule injection pourrait s'expliquer par le *facteur d'expansion de Duran-Reynals*. Les tissus de l'économie sont maintenus ensemble par une substance faisant office de ciment. Certaines substances telles l'hyaluronidase ayant la propriété de les dissoudre, il résulte que leur adjonction permet une diffusion plus rapide des liquides injectés. Ces substances qui accélèrent la diffusion (Hyaluronidase (45a), Kinetin All.) sont difficilement contrôlables et doivent être utilisées avec prudence afin d'éviter une trop grande étendue de l'anesthésie. Elles pourraient cependant être utiles en cas de neuroblocage, d'anomalies anatomiques, traumatiques ou pathologiques.

Anesthésie Locale

Préalablement, on badigeonnera la muqueuse avec un bon anesthésique de surface. On attendra quelques minutes, ce temps étant utilisé à préparer la seringue et pour permettre à la solution d'agir. On diminue également la douleur de la première injection en faisant de la compression digitale au lieu choisi pour l'injection.

L'injection par infiltration se fera toujours en deux, voire en trois temps. On injecte d'abord quelques gouttes de la solution à la température du corps. On attend trente à quarante secondes et on injecte la quantité restante de l'anesthésique dans le dépôt ainsi formé.

Procédant ainsi:

a) La douleur causée par l'introduction de l'aiguille dans les couches tissulaires profondes est amoindrie.

b) Les réactions secondaires du patient sont quasi inexistantes.

Un bon massage du lieu d'injection favorise la diffusion de l'anesthésique.

Technique de l'anesthésie locale et points d'injections

Il faut toujours stériliser la muqueuse à l'endroit où l'aiguille sera enfoncée. La teinture d'iode donne d'excellents résultats. Actuellement avec les anesthésiques que nous utilisons, une solution à 2% est suffisante. Elle sera *adrénalinisée* ce qui permettra de bloquer l'anesthésie à l'endroit désiré. Sans adrénaline ou succédané, l'anesthésie est difficile si ce n'est impossible à réaliser.

1. Monoradiculaires supérieures et inférieures

Même technique pour toutes ces dents où la table alvéolaire est mince, à savoir une seule injection périostée, vestibulaire. Ne pas intervenir en cas de gingivite ou de toute inflammation de la muqueuse.

Il faut introduire l'aiguille, le biseau parallèle au maxillaire, au niveau du tiers supérieur de la racine, donc plus près du collet que de l'apex. Une fois au contact du périoste, l'injection est poussée lentement. Cette anesthésie est préférable pour les monoradiculaires à une anesthésie intraligamentaire plus douloureuse. Une anesthésie para-apicale est aléatoire au maxillaire inférieur à cause de l'épaisseur de l'os, plus dense à ce niveau. Par contre la para-apicale réussit fort bien au maxillaire supérieur.

Durant l'injection, il se produit un oedème que l'on aura intérêt à masser du doigt afin de faire diffuser plus rapidement l'anesthésique.

La para-apicale au maxillaire inférieur donne une anesthésie muqueuse, *labiale*, osseuse mais pas pulpaire.

La première prémolaire supérieure a souvent 2 racines. Il faudra attendre un peu plus longtemps l'anesthésie totale. On peut à la rigueur pratiquer une 2me in-

jection para-apicale palatine pour compléter l'action de la piqure vestibulaire.

2. Molaires supérieures

L'anesthésie telle qu'elle est pratiquée pour les monoradiculaires n'est plus valable.

Il faut pratiquer une anesthésie para-apicale vestibulaire, voire para-apicale palatine (*perpendiculairement à la racine palatine où l'os est plus poreux*). Si l'effet désiré n'est pas obtenu, on peut pratiquer en complément une anesthésie intraligamentaire vestibulaire entre les deux racines afin de les atteindre toutes deux. Pour cette dernière opération il faut d'excellentes aiguilles à biseau bien aiguisé, car il y a lieu de les forcer et de les coincer entre la dent et la paroi alvéolaire. Pour ce faire, le biseau sera toujours tourné face à la paroi de la dent, afin de glisser comme un coin. Lorsque l'aiguille est bien en place, on a beaucoup de peine à injecter le liquide et la pression exercée est très forte. De même, il faut insister pour retirer la seringue. Quelques gouttes d'anesthésiques suffisent.

3. Molaires inférieures

Le maxillaire inférieur est très épais et les anesthésies périostées et para-apicales ne donnent que rarement des résultats positifs.

Seule dans ces cas là, l'anesthésie intraligamentaire donne un résultat. Bien entendu une anesthésie tronculaire à l'épine de Spix nous donne des résultats identiques, mais avec beaucoup plus d'inconvénients pour le patient. Nous-même, nous ne répugnons pas à pratiquer une telle anesthésie, si nous ne devons traiter qu'une seule molaire. Il ne faut pas oublier qu'avec les anesthésiques actuels, la paresthésie de la lèvre à la suite d'une injection spigienne dure un minimum de quatre heures.

Pour des raisons techniques, l'injection intraligamentaire se fera du côté lingual entre les racines, car on est moins gêné. Une petite injection muqueuse préalable supprime la douleur lors de l'enfoncement et du coincement de l'aiguille dans le ligament entre les racines. *L'injection sera toujours lente.*

On peut aussi, en cas d'anesthésie rebelle de la pulpe, spécialement pour les canines inférieures, pratiquer l'injection sous-périostée. L'aiguille doit bien perforer le périoste pour permettre à la solution de mieux diffuser à travers la corticale osseuse.

4. *L'injection intra-osseuse*

Si toutefois l'anesthésie pulpaire échoue avec les moyens ordinaires, ce qui peut arriver, il est très important d'avoir une méthode de réserve. Cette méthode est l'injection intra-osseuse qui, pratiquement, ne connaît pas échec et dont l'anesthésie produite est profonde. Cependant il ne faut l'utiliser que lorsque les autres méthodes ont échoué. Puisque le nerf sensitif de la dent quitte celle-ci par le foramen apical et chemine dans le tissu osseux spongieux près de l'apex, la déposition d'une solution efficace dans cette région est certaine d'atteindre le nerf et de produire l'anesthésie. La barrière créée par la corticale osseuse n'existe plus.

Technique: Une simple anesthésie gingivale préalable suffit pour permettre de traverser la muqueuse et la corticale osseuse sans douleur. Le forage est accompli au moyen d'un forêt de Beutelrock No 5 monté sur pièce à main. L'emploi d'une fraise est contre-indiqué. La perforation osseuse s'effectue dans l'espace interproximal de deux dents, au-dessous du bord libre de la gencive. *Il ne faut pas forer juste au niveau d'une racine pour ne pas l'endommager.*

Après avoir repéré le point d'injection, stériliser la muqueuse à la teinture d'iode et perforer la muqueuse et la corticale osseuse *en même temps*. Dès que la moelle osseuse est atteinte, une diminution soudaine de la résistance au forage se fait sentir.

Il n'est pas nécessaire de pénétrer à plus de 3 mm. au delà de la corticale. Retirer le forêt. On voit apparaître quelques gouttes de sang. Introduire ensuite l'aiguille de la seringue par le même chemin.

Injecter sans pression (elle n'est d'ailleurs pas nécessaire) 0,5 cm³ de solution anesthésique à 1,5-2% avec épinéphrine. La durée de cette anesthésie est plus courte que celle obtenue par les autres techniques, mais on peut réinjecter de l'anesthésique. Comme la perforation osseuse subsiste après la cicatrisation osseuse, elle peut être réutilisée au besoin pour une séance ultérieure.

Cette méthode peut-être utilisée sur les deux maxillaires. Elle est plus facile sur le maxillaire supérieur pour des raisons de densité osseuse.

Contre-indications: peu nombreuses.

1. Maladie parodontale avec forte destruction osseuse au lieu d'injection.

2. Elle ne permet que l'anesthésie de deux dents voisines et on ne peut traiter un grand nombre de dents en une seule séance.

Enfin dernièrement, *Médecine et Hygiène* a consacré un article à l'anesthésie intradiplômique simplifiée du Dr F. Barri, Paris. Elle consiste à placer l'aiguille entre deux dents en face du centre de la languette triangulaire interdendaire du côté distal de la dent. Donner ensuite un coup sec sur le corps de la seringue avec le manche lourd du miroir de bouche. L'aiguille doit pénétrer de 0,5 à 1 cm. environ. Si elle n'est pas entrée suffisamment, on donne d'autres coups successifs sur la seringue immobile. On injecte ensuite et on relève ensuite la seringue en donnant un petit coup en sens inverse. On nous met en garde contre une éventuelle fracture de l'aiguille. Nous croyons que c'est le reproche essentiel que l'on peut faire à cette méthode. Introduire de force de 1 cm. une aiguille en tissu osseux même spongieux nous paraît aléatoire, même si on utilise une aiguille d'acier souple incassable, qui risque alors de se courber sous l'effet de la pression trop énergique.

Médecine et Hygiène, 10 mars 1958

INVITATION AU CONGRÈS

Le Congrès de l'Association Dentaire Canadienne, votre congrès, chers collègues, se tiendra à Montréal du 26 au 29 octobre prochain.

Cet évènement scientifique annuel, la plus importante manifestation de nos activités professionnelles, doit remporter cette année un succès sans précédent.

Il doit d'abord établir sans équivoque l'intérêt que portent les dentistes de notre province à tous les problèmes dentaires qui se posent dans le moment, ou qui surgiront dans un avenir rapproché. Il doit aussi justifier la confiance accordée aux organisateurs de ces importantes assises qui, vous le savez, engagent particulièrement cette année la responsabilité de notre groupe ethnique. Il doit enfin avoir des proportions telles que nos gouvernants sentent la solidarité qui existe dans nos rangs vis-à-vis de tous les problèmes qui nous confrontent, tant à l'échelle provinciale que nationale.

Pour toutes ces raisons, chers collègues, le Président de votre Collège ne peut que vous réitérer la cordiale bienvenue qui vous attend à Montréal le 26 octobre prochain et exprimer le vœu que personne d'entre nous ne voudra se soustraire au devoir d'ajouter à son savoir et au plaisir de rencontrer ses confrères et amis.

V. A. Dubé,
Président—C.C.D. P.Q.

Le plus gros congrès de dentistes jamais organisé au Canada

Un événement à ne pas manquer—du 26 au 29 octobre, au nouvel hôtel

Le REINE ELIZABETH

Congrès National de l'Association Dentaire Canadienne

Dr Charles-A. Durand, trésorier,
Comité de l'Inscription,
758 ouest, rue Sherbrooke,
Montréal 2, P.Q.

FORMULE D'INSCRIPTION

MONTREAL
26 au 29 octobre 1958

Inscrivez VOTRE nom seulement. (Voir plus bas pour inscription de votre épouse, vos enfants ou autres personnes)

NOM
(LETTRES MOULEES)

ADRESSE

VILLE PROVINCE

VEUILLEZ TROUVER CI-INCLUS

MON CHEQUE DE \$.....

Les chèques sont payables à l'ordre du
CONGRES 1958 de l'A.D.C.

FRAIS D'INSCRIPTION

UNE PERSONNE	\$35.00
L'EPOUSE	10.00
TOTAL	\$45.00

INSCRIPTION SUPPLEMENTAIRE

Je serai accompagné de mon épouse:

MADAME
(LETTRES MOULEES)

Je serai accompagné de mes enfants:

NOMBRE

AGE

Il n'y a pas de frais d'inscription pour les enfants
qui n'assisteront pas aux événements du Congrès.

IMPORTANT

TOUTES LES AUTRES PERSONNES DOIVENT REMPLIR
UNE FORMULE D'INSCRIPTION SEPARÉE

REMARQUES

L'inscription de \$35.00 pour les
dentistes et \$10.00 pour leurs
épouses comprend tous les
lunches, réceptions et dîners in-
scrits au programme, ainsi que
le D I N E R - D A N S A N T D U
PRESIDENT.

PROGRAMME SPECIAL

POUR LES DAMES

DIMANCHE, 26 octobre

- P.M. Inscription
 Golf (si la température le permet)
 Concert

LUNDI, 27 octobre

- A.M. Inscription
 Ouverture officielle de l'exposition artistique
- P.M. Dîner de l'Association Dentaire Canadienne
 Conférencier: Son Eminence le Cardinal Paul-E. Léger
 Manifestation spéciale
 Coquetel et buffet

MARDI, 28 octobre

- A.M. Inscription
 Exposition artistique
 Départ pour Ste-Adèle
- P.M. Coquetel et dîner à l'hôtel Chanteclerc
 Retour des Laurentides
 Réunions de conventum

MERCREDI, 29 octobre

- A.M. Inscription
 Exposition artistique
 Visites organisées
- P.M. Défilé de modes
 Banquet et danse en l'honneur du Président.

Congrès National de l'Association Dentaire Canadienne

Dr. Charles-A. Durand, trésorier,
Comité du Logement,
758 ouest, rue Sherbrooke,
Montréal 2, P.Q.

FORMULE DE RÉSERVATION

26 au 29 octobre 1958
MONTREAL

Veillez INDICHER PAR LE NUMERO

le logement désiré:

1er CHOIX	2e CHOIX	3e CHOIX

ARRIVEE: DATE HEURE

RETOUR: DATE HEURE

NOM
(LETTRES MOULEES)

ADRESSE

VILLE PROVINCE

AUCUNE RESERVATION DE LOGEMENT NE SERA ACCEPTEE, A MOINS
QU'ELLE NE SOIT ACCOMPAGNEE DE LA FORMULE D'INSCRIPTION

RENSEIGNEMENTS ➡ TAUX ➡ GENRE DE LOGEMENTS ➡ FAITES VOTRE CHOIX PAR NUMERO

Marquez d'un X

le GENRE DE TRANSPORT utilisé

AUTO ☐ BUS ☐ AVION C.N.R. ☐ C.P.R. ☐

NOMBRE DE PERSONNES

REMARQUES IMPORTANTES

1. S'il ne reste plus de chambre disponible au tarif que vous demandez, la réservation vous sera faite au taux immédiatement plus élevé.
2. L'hôtel ne peut vous garantir l'accès de votre chambre pour l'avant-midi de votre arrivée.
3. Si vous arrivez le soir, vous devez le spécifier. Autrement les réservations seront annulées par l'hôtel à 6 h. p.m.

Très Important:

Les Réservations Seront Numerotées dans l'Ordre de Réception au Bureau du Comité du Logement

LOGEMENTS ET TARIFS				
Hôtels	Le Reine Elizabeth		Windsor	Laurentien
	SECTION "A" PAR JOUR	SECTION "B" PAR JOUR	SECTION "C" PAR JOUR	
Chambre avec bain, pour une personne	No A-1 de \$ 9.00 à 14.00	No B-1 de \$ 8.00 à 13.00	No C-1 de \$ 7.50 à 10.50	
Chambre, lit double, avec bain pour deux personnes	No A-2 de 13.00 à 26.00	No B-2 de 12.00 à 17.00	No C-2 de 10.85 à 12.00	
Chambre, lits jumeaux, avec bain, pour deux personnes	No A-3 de 13.00 à 30.00	No B-3 de 12.00 à 18.00	No C-3 de 11.85 à 14.50	
Chambre avec bain, pour trois personnes	No A-4 de 14.00 à 18.00	No B-4 de 15.00 à 21.00	No C-4 de 16.00 et plus	
Suite pour une personne, salon chambre et bain	No A-5 de 26.50 à 36.00	No B-5 de 19.00 à 35.00	No C-5 de 16.00 et plus	
Suite pour deux personnes, salon, chambre et bain	No A-6 de 26.50 à 36.00	No B-6 de 23.00 à 50.00		NIL
Suite pour quatre personnes, salon, chambre et bain	No A-7 de 50.00 à 75.00			NIL
Suite, deluxe	No A-8 de 85.00 à 150.00			NIL

Pour vous assurer un logement à Montréal durant le Congrès, vous devrez faire parvenir votre formule de réservation avant le 22 septembre 1958.

Près d'un million de Canadiens boivent de l'eau fluorurée

Près d'un million de citoyens de ce pays boivent maintenant de l'eau dont la teneur en fluor est fixée par la fluoruration. Par ailleurs, des milliers de Canadiens consomment depuis plusieurs années de l'eau dont le contenu en fluor est naturel. Un grand nombre de municipalités se sont prononcées par plébiscite en faveur de la fluoruration, mais n'ont pas encore l'appareillage nécessaire.

On lira plus loin la liste des municipalités qui ont commencé à fluorurer l'eau de leur aqueduc et ces données sont amassées grâce à une enquête entreprise tous les ans par l'A.D.C.

Municipalités qui se servent de fluoruration (au 1er janvier 1958)			
Municipalité	début	population	
Terre-Neuve aucune			
Ile-du-Prince-Edouard aucune			
Nouvelle-Ecosse			
Halifax	Juin 11, 1956	90,871	
Dartmouth	Juillet 3, 1956	20,004	
Kentville	Fév. 16, 1956	4,840	115,715
Nouveau-Brunswick aucune			
Québec			
Joliette	1957	18,168	
Pointe-Claire	Fév. 3, 1955	15,067	
Sillery	Oct. 19, 1955	13,800	47,035
Ontario			
Brantford	Juin 20, 1945	51,557	
Brockville	Fév. 18, 1956	15,000	
Deep River	Déc. 9, 1952	3,000	
Fort Erie	Jan. 18, 1952	8,567	
Oshawa	Fév. 26, 1953	50,136	
Sudbury	Août 20, 1952	50,000	
Thorold	Fév. 12, 1952	8,000	
Tisdale Township	Oct. 3, 1955	8,000	204,260
Manitoba			
Brandon	Mars 8, 1955	24,579	
Portage la Prairie	Jan. 10, 1957	10,374	
Winnipeg	Déc. 28, 1956	409,687	444,640
Saskatchewan			
Assiniboia	Mai 1953	2,027	
Eston	Sept. 1957	1,578	
Moose Jaw	Déc. 1952	29,603	
Saskatoon	Juillet 1955	72,858	
Swift Current	Oct. 1954	10,612	
Weyburn	Mars 1955	7,684	
Wynyard	Août 1956	1,625	125,987
Alberta aucune			
Colombie britannique			
Kelowna (Glenmore inclus)	Sept. 15, 1956	10,468	
Prince George	Sept. 13, 1956	10,563	
Prince Rupert	Mars 1, 1957	10,498	
Smithers	Juin 21, 1955	1,962	33,491
TOTAL DU CANADA			971,128

Liste d'honoraires du Ministère des Affaires des Vétérans

Le Ministère des Affaires des Vétérans a révisé et adopté une nouvelle liste d'honoraires. Cette nouvelle liste augmente les honoraires de 30% en moyenne et est devenue en force le 1er février.

Des représentants de l'Association dentaire canadienne ont rencontré à Ottawa des fonctionnaires du Ministère concerné et d'autres Ministères pour la révision de cette liste. La réunion a réussi à faire augmenter la plupart des honoraires pour les divers traitements. L'Association a appris après coup que la nouvelle échelle avait été approuvée dans son ensemble.

On trouvera plus loin cette liste d'honoraires.

**Ministère des Affaires des Vétérans
Liste d'honoraires à l'usage des dentistes civils**

- (1) A moins d'avis contraire, la liste d'honoraires de cette section s'appliquera au paiement des notes pour les traitements autorisés et pour la perception des comptes recevables.
- (2) Les honoraires pour des traitements autres que ceux mentionnés dans la liste et les honoraires excédant ceux donnés pour des traitements analogues doivent être approuvés au préalable par le Directeur.
- (3) Le dentiste doit se considérer responsable pour une période de temps raisonnable après la fin de ses traitements pour toutes les restaurations ou les prothèses qu'il aura confectionnées.
 - (a) Diagnostic et rapport..... \$3.00
 - visite professionnelle à domicile ou à l'hôpital..... 5.00
 - (b) Traitements:
 - (1) prophylaxie (comprenant détartrage et polissage)..... 3.00 à 5.00
 - (2) traitement de périodontie
Le chef de district du Service dentaire en fixera les honoraires.
 - (3) urgence (palliatif)..... 3.00
 - (4) coiffage de pulpe..... 3.00
 - (c) Radiographies et diagnostics:
 - (1) pellicule unique intra-orale (coronaire ou apicale)..... 3.00
 - (2) toute pellicule additionnelle..... 1.00
 - (3) série complète (7 films—sup. ou inf.)..... 7.00
 - (4) bouche complète (14 films)..... 12.00
 - (d) Chirurgie:
 - (1) extraction sous anesthésie locale
1ère dent dans chaque quadrant... 4.00
Toute dent additionnelle dans le même quadrant..... 1.00
 - (2) extraction sous anesthésie générale
1 à 3 dents..... 7.00
4 à 8 dents..... 10.00
8 à 16 dents..... 15.00
plus de 16 dents..... 20.00
Pour la chirurgie buccale, comprenant dents incluses et fractures, des radiographies et un rapport détaillé sont nécessaires. Le Directeur fixe les honoraires.
 - (3) Extirpation de pulpe et remplissage du canal. Le chef du district pour le service dentaire décide des honoraires.

(e) Obturations	
(1) amalgame (1 côté).....	3.00
(2) amalgame (2 côtés).....	6.00
(3) amalgame (3 côtés).....	8.00
(4) silicate.....	6.00
(5) acrylique.....	6.00
(6) incrustation ou aurification (1 côté).....	15.00
(7) incrustation ou aurification (2 côtés).....	20.00
(8) incrustation ou aurification (3 côtés).....	25.00
couronne en or, face occlusale coulée.....	25.00
(9) couronne en or—antérieure.....	25.00
couronne en or, réparation, comprenant la remise en place.....	10.00
(10) couronne en porcelaine.....	50.00
réfaction de couronne en porcelaine.....	25.00
(11) couronne en acrylique.....	35.00
réfaction de couronne en acrylique.....	20.00
(f) Ponts fixes (attaches comme dans (e) ci-dessus).	
Pontiques (comprenant la soudure aux attaches).....	15.00
Réparation de pont en utilisant une nouvelle partie (attache ou pontique). Tarif régulier comme plus haute pour nouvelle unité plus l'assemblage, la soudure et la remise en place.	
—1 attache.....	5.00
—2 ou plus d'attaches.....	7.00
remplacer facette de porcelaine.....	5.00
remise en place d'un pont avec une attache.....	5.00
avec deux attaches.....	7.00
(g) Prothèse partielle amovible (pour attaches, comme plus bas)	
Base et dents.....	40.00
crochet en or avec appui, façonné ou coulé.....	10.00
barre coulée.....	20.00
réfaction de prothèse partielle (en utilisant les dents et les attaches de l'ancienne prothèse).....	35.00
rebasage de dentier partiel.....	18.00
(h) Prothèse complète	
supérieure ou inférieure, chacune.....	60.00
supérieure ou inférieure, réfaction (utilisant les mêmes dents).....	55.00
rebasage de prothèse sup. ou inf. avec cuisson.....	25.00
rebasage de prothèse sup. ou inf. avec résine autopolymérisante.....	10.00
(i) Réparation de prothèse, partielle ou complète	
seulement la base.....	7.00
dent remplacée, chacune.....	2.00
réparation ou extension nécessitant empreinte de l'arcade, chacune.....	5.00

Voici maintenant des explications supplémentaires au sujet des traitements dentaires; les lettres entre parenthèses correspondent à celles utilisées dans la liste des honoraires

- (a) Avant de procéder à un examen autorisé, le dentiste doit enlever les calculs et les débris qui nuisent à un diagnostic et à un rapport précis; le rapport doit être détaillé (voir page 4 des formules 467 du Ministère des Affaires des Vétérans); autrement, on ne paiera pas pour le rapport.
- (b) (1) Une prophylaxie veut dire l'ablation du tartre et le polissage des dents; ce traitement est autorisé seulement quand il n'y a pas de pathologie dans les gencives nécessitant des traitements de périodontie. Ce traitement n'est pas considéré comme un traitement à part et fait partie des traitements de périodontie. L'honoraire de \$3.00 sera payé quand il n'y a que quelques dents et quand celles-ci ne requièrent qu'un nettoyage.
- (b) (2) Les traitements de périodontie ne seront autorisés qu'après que l'opérateur en aura fait la demande, en indiquant clairement leur nécessité et en faisant un rapport détaillé de l'état des gencives, une description des

traitements suggérés et en établissant un pronostic.

- (b) (3) Le Ministère ne se rend responsable des traitements d'urgence que pour les vétérans et pour les autres personnes qui sont éligibles pour ces traitements au frais du public.
- (b) (4) Les honoraires pour un traitement d'urgence, autre qu'un traitement palliatif, sont accordés au même tarif que celui payé pour le traitement donné.
- (b) (5) On accorde des honoraires pour le coiffage de pulpe seulement quand celle-ci est atteinte et qu'il y a des chances raisonnables de la sauver. Il faut utiliser une substance reconnue pour ce traitement.
- (c) (1) (4) Le chef du district pour le service de dentisterie est celui qui autorise les radiographies, quand elles sont nécessaires pour établir un diagnostic. Les films qui montrent des images déformées et qui ne contiennent pas assez de substance pour aider à poser un diagnostic ou qui ne portent pas le nom et le numéro du patient et la date de pose ne sont pas acceptés et ne sont pas payés.
- (d) (1) Les extractions se font généralement sous anesthésie locale. On ne doit pas entreprendre d'extraction sans anesthésie. Les honoraires pour des extractions ne doivent jamais dépasser \$30.00.
- (d) (2) On ne permet qu'exceptionnellement l'anesthésie générale. Pour être payés, les honoraires de l'anesthésiste doivent être soumis au Service d'Admission sur un compte différent.
- (d) (3) L'extirpation de pulpe et les traitements de canaux sont autorisés seulement dans des cas exceptionnels où le chef de district du service dentaire croit que ces traitements peuvent donner de bons résultats. Ce traitement doit être entrepris par un bon opérateur disposant de techniques modernes.
- (e) On recommande l'emploi de la digue pour les insertions d'obturations.
- (e) (1) (3) Si nécessaire, les obturations en amalgame doivent avoir une base en ciment isolant sans frais additionnels. Toutes les obturations doivent avoir une bonne forme de contour, un point de contact et être sculptées pour convenir à l'occlusion. Le tarif pour une obturation en amalgame d'un côté d'une dent ne doit jamais dépasser \$3.00; de même, le tarif maximum pour l'obturation en amalgame d'une dent ne doit jamais dépasser \$11.00.
- (e) (4) (5) Les dents restaurées en silicate ou en acrylique doivent avoir sous l'obturation une couche de matériel protecteur, radiopaque et imperméable aux ingrédients de la substance obturatrice. L'insertion de ce matériel est compris dans les honoraires payés pour l'obturation. Le tarif maximum pour l'obturation d'une dent avec ces matériaux ne doit jamais dépasser \$12.00.
- (e) (6) (8) L'or utilisé pour les incrustations et les attaches de pont doit être d'une qualité conforme aux standards métallurgiques de l'A.D.A. Les incrustations qui ne servent pas à des attaches de pont sont permises seulement pour les six dents antérieures, supérieures, quand l'angle incisif est compris. (Pour le personnel de la Police Montée, on permet ces restaurations dans les huit dents antérieures supérieures et inférieures.) On ne permet pas les incrustations sur les dents postérieures, à moins que ces incrustations servent d'attaches de pont.

(Suite et fin, p. 12)
bas droit

**Rapports de recherches entreprises
au sujet du sucre**

Le magazine *Time* rapportait récemment les résultats de recherches entreprises par le docteur James H. Shaw, Ph.D., assistant professeur de chimie biologique à la faculté de médecine dentaire de l'Université Harvard. Le rapport du docteur Shaw paraissait dans la livraison de décembre 1957 du *Journal de l'Association dentaire américaine*.

Le but des recherches du docteur Shaw était de savoir jusqu'à quel point certaines formes de sucre favorisent la carie dentaire et de trouver des façons de la prévenir. La Fondation des Recherches sur le sucre, fondée par l'industrie du sucre, fournissait \$57,000.00 pour financer ces recherches pendant dix ans.

Voici quelques résultats de ces recherches. En nourrissant les rats à l'aide d'un tube, i.e. en empêchant la nourriture de pénétrer par la bouche, on a réussi à bannir la carie dentaire. En donnant des aliments sans hydrates de carbone ou contenant des quantités minimales de sucrose ou d'amidon, on n'a pas observé de carie. A mesure qu'augmentait la teneur des aliments en sucrose ou en amidon, la fréquence de la carie augmentait dans la même proportion. La façon d'ingérer les aliments s'est révélé importante. Le sucre introduit directement dans l'estomac ne cause pas de carie. Quand il est mangé en solution, il cause peu de carie, mais quand il est pris sous forme granuleuse, la fréquence de la carie s'accroît sensiblement. Des observations faites à l'occasion de dosages purifiés ont montré que les monosaccharides et les disaccharides sont les sucres qui occasionnent le plus de carie dentaire. Les amidons et les dextrines sont moins producteurs de carie. Une alimentation composée d'éléments naturels avec une grande concentration de graines de céréales et une faible quantité de dextrose et de sucrose produit un nombre considérable de début de carie et une propagation rapide des cavités. En augmentant la teneur en sucre de ces composés, on produit encore plus de carie. La substitution du sucre brut au sucrose n'a pas montré de changement, mais le remplacement du sucre par de la mélasse noire diminue l'incidence de la carie.

Les résultats obtenus ne montrent pas que les hydrates de carbone doivent être éliminés de l'alimentation. En créant dans la bouche des conditions fixées à l'avance, on se rend compte que des facteurs génétiques influencent grandement le degré de susceptibilité à la carie. Le contrôle des aliments au cours de la formation des dents peut rendre celles-ci résistantes à la carie même si plus tard ces dents baignent dans un milieu favorable à la carie.

La pénécilline et la chlortetracycline sont des agents qui s'opposent à la carie, comme l'urée et le carbonate d'ammonium dibasique. Les autres antibiotiques et les autres substances chimiques qu'on a essayées — et qu'on trouve généralement dans les pâtes dentifrices — ont peu ou pas d'effet.

Après avoir supporté durant dix ans et demi le coût de ces recherches, la Fondation des Recherches sur le sucre a cessé ses octrois.

*(Suite et fin de l'article
de la page 11)*

- (e) (9) Les surfaces occlusales des couronnes doivent être renforcées avec une soudure de 18 carats.
- (e) (10) Les couronnes de porcelaine ne sont autorisées par le directeur que dans les cas où ce travail s'avère indispensable pour protéger la vitalité de la dent.
- (f) Les ponts fixes sont permis pour remplacer les six dents antérieures, haut et bas, excepté pour les agents de la Police Montée, où les huit dents antérieures, supérieures ou inférieures, peuvent être remplacées par ce genre de prothèse.
- (g) On autorise la confection de prothèses partielles seulement dans les cas où au moins trois dents doivent être remplacées. Tous les crochets doivent s'insérer sur les deux surfaces convexes de la dent (crochets doubles) et doivent avoir un appui occlusal pour prévenir le décollement de la gencive. Les crochets et les barres coulés ne sont permis que quand les conditions anatomiques et la condition sociale du patient l'exigent. Les barres en or doivent être d'une qualité correspondante aux exigences métallurgiques de l'A.D.A. et non ce qu'on est convenu d'appeler les barres en "or plaqué".
- (g) (h) (i) Dans la construction d'appareils amovibles, il faut suivre une technique reconnue et acceptée. Seuls des dents et du matériel de bonne qualité et de marque connue doivent être utilisés.

Nouvelles de l'Association

Centenaire de l'Association dentaire américaine

La célébration du centenaire de la fondation de l'A.D.A. aura lieu à New York, du 14 au 18 septembre 1959, plutôt que du 21 au 24, comme on l'avait annoncé. Ce changement, comme nous l'annonce le docteur Harold Hillenbrand, secrétaire de l'A.D.C., permettra d'avoir plus de chambres d'hôtel disponibles. Le congrès a aussi été porté de quatre à cinq jours pour permettre un plus grand nombre de communications scientifiques et de réceptions.

La Fédération dentaire internationale tiendra son congrès conjointement avec l'A.D.A. et des représentants d'environ 75 pays prendront part aux activités de cette réunion. On s'attend à ce qu'une foule de 20,000 à 25,000 dentistes, venant de toutes les parties du monde, s'associent aux dentistes américains pour célébrer la fondation de l'Association dentaire américaine, qui a été formée aux Chutes Niagara, New York, en 1859.

Les séances scientifiques auront lieu au New York Coliseum et comprendront des discussions de groupe (panel), des symposia, des cliniques et des conférences par des praticiens de marque, des chercheurs et des éducateurs des Etats-Unis et de plusieurs autres pays.

Les Quartiers-Généraux du Congrès seront situés aux hôtels suivants: Waldorf Astoria, Statler et Biltmore. Tous les principaux hôtels de la ville de New York recevront les congressistes. La Fédération dentaire internationale aura son Secrétariat à l'Hôtel Manhattan. Un bureau spécial sera organisé au printemps de 1958 pour recevoir les demandes de ceux qui désireront retenir des chambres à l'occasion du Congrès.

Tous ceux qui veulent avoir des renseignements au sujet de la célébration du centenaire de l'A.D.A. peuvent communiquer avec le secrétaire de l'A.D.A., à 222 Superior East St., Chicago 11, Etats-Unis.

Plus de neuf millions de dollars dépensés pour des dentifrices

La vente des produits de toilette a atteint le chiffre record de \$53,819,000.00 en 1956, dépassant de 14% le total de l'année précédente, qui se montait à \$47,167,000.00, et doublant la somme de 1949, qui était de \$27,102,000.00. Les dentifrices, pour leur part, ont atteint la somme de \$9,027,000.00; en 1955, la somme était de \$8,024,000.00.

Au sujet du plan d'Épargne-Pension de l'A.D.C.

Les premières informations concernant ce plan ne furent connues que vers la fin de 1957 (18 décembre). Par conséquent, très peu de membres de l'Association eurent le temps de s'y inscrire et d'obtenir une réduction de prélèvement pour 1957. Environ 3% des membres répondirent immédiatement. Dans un aussi court délai, une telle réponse est encourageante. Dès qu'on sera mieux renseigné sur les avantages du plan, celui-ci prendra sans doute un grand essor.

Les membres adhérant au plan pour le trimestre finissant le 28 février 1958 ont payé \$121,464.00 de contributions, applicables à l'impôt pour l'année 1957. Voici en détail ces contributions par rapport aux trois différents fonds:

1. Fonds d'obligations du gouvernement	\$ 19,698.30	16.2%
2. Fonds d'obligations de corporations	\$ 40,382.80	33.2%
3. Fonds d'actions communes	\$ 61,382.90	50.6%
Total	\$121,464.00	100%

Il y a eu 188 souscriptions au plan. Sur ce nombre, 160 ont payé leur cotisation. Cette cotisation s'élevait en moyenne à \$760.00 par membre. Tous les membres participants ont été inscrits officiellement au Ministère du Revenu national à Ottawa. Des reçus pour l'impôt ont été envoyés.

En reconnaissance au doyen Charron

La faculté de Chirurgie dentaire organise une campagne pour faire reconnaître les grandes réalisations de son doyen, le Dr Ernest Charron, dernièrement résigné de ses fonctions.

Le Dr Charron a accompli une tâche immense au sein de l'enseignement dentaire, et pour le progrès de l'art dentaire en général.

Le but de cette campagne est de réaliser les fonds nécessaires pour faire exécuter par un artiste canadien une peinture à l'huile du docteur Charron, et pour fonder une bourse d'études qui portera le nom du doyen Charron.

Veuillez faire parvenir vos souscriptions au:

Dr Gérard de Montigny
Faculté de Chirurgie dentaire
Université de Montreal
C.P. 6128, Montreal

Notes sur la dentisterie en Suède

Population: 7,000,000.

Nombre de dentistes: 4,500 (environ 25% de femmes).

Proportion des dentistes en rapport avec la population: 1/1650 environ.

Note: Parmi ces 4,500 dentistes, il y a environ 400 dentistes étrangers qui se sont installés en Suède depuis quelques années. Ces dentistes étrangers ont été placés par le gouvernement dans le Service dentaire public. Ils ne peuvent pas exercer en pratique privée, mais ils peuvent se qualifier pour subir les examens de Suède dans le but d'obtenir une licence qui leur permette d'exercer. Cette procédure prend de 2 à 3 ans.

Service dentaire public*Historique:*

Peu après le début du siècle, la Suède a commencé à s'intéresser à l'établissement d'un service dentaire public. Le gouvernement a considéré plusieurs formules mais, à cause des déboursés considérables que ces plans nécessitaient, l'affaire n'a pas eu de suite immédiate. Ce n'est qu'au 1er janvier 1939 que le Service dentaire fut créé. Mais, dès 1905, grâce à la générosité de quelques citoyens imbus d'esprit civique et surtout de la Croix-Rouge suédoise, des services dentaires étaient organisés dans les écoles, sans appui du gouvernement. Petit à petit, le service dentaire public, organisé par le gouvernement, absorbe le service dentaire scolaire.

Fonctionnement:

Ressemblant beaucoup au plan de la Norvège, celui de Suède est décentralisé. Pour recevoir les subsides du gouvernement, les conseils municipaux de chaque comté (25) et les municipalités plus considérables (16) doivent installer des cliniques dentaires qui traitent les adultes et les enfants. Les conseils municipaux dirigent le service dentaire public. Les autorités municipales de chacun des districts nomment un officier dentaire qui est responsable vis-à-vis du Bureau central, (Bureau Médical Royal), et reçoit de lui ses instructions.

Services:

Tous les services dentaires y sont donnés, hormis l'orthodontie qui est soumise à certaines restrictions. Des orthodontistes y travaillent à temps complet, mais il ne peuvent donner tous les soins qui s'imposent. On doit référer des patients aux praticiens privés.

Patients des services:

Les enfants de 3 à 15 ans ont droit à des traitements gratuits. On s'occupe surtout des enfants de 7 à 15 ans; ceux de 3 à 6 ans sont vus quand on en a le temps. Les femmes enceintes ont des priorités. Les patients de 16 à 19 ans ont une réduction de 25% des honoraires fixés par le gouvernement; cette liste d'honoraires est jugée très basse. Ces dentistes qui travaillent au service dentaire public doivent consacrer 55% de leur temps aux enfants de 7 à 15 ans. Depuis la dernière guerre, le nombre des enfants a tellement augmenté que seuls les enfants de 9 à 12 ans peuvent faire traiter à fond leurs dents. Le dentiste du service travaille 42 heures par semaine et 47 semaines par année. (4 semaines de vacances)

Après avoir consacré 55% de son temps aux enfants, il peut traiter les adultes qui paient les honoraires minimes fixés par le gouvernement. En plus de son salaire, le dentiste peut recevoir des bonus s'il consacre plus de 55% de son temps aux enfants. Il perçoit aussi 25% des honoraires payés par les adultes. Cette concession a été consentie par le gouvernement pour attirer plus de dentistes dans le service.

Nombre de dentistes:

La Suède manque de dentistes. Comme tous les pays qui établissent un service dentaire, la Suède, au début, n'avait pas assez de dentistes. Pour régler ce problème, le gouvernement adopta deux solutions. D'abord, il décida de construire de nouvelles écoles dentaires (voir plus bas au sujet de l'enseignement dentaire). Ensuite, il fit appel à des dentistes étrangers pour son service dentaire public et il y en a actuellement à peu près 400. Les dentistes de Suède firent entendre des protestations, de sorte que ces dentistes étrangers ne peuvent avoir de clientèle privée avant deux ou trois ans de séjour. 25% des dentistes du service sont des femmes et tous les dentistes qui y travaillent doivent y consacrer tout leur temps. L'Association dentaire Suédoise fait actuellement des démarches pour que les dentistes puissent travailler à demi-temps dans le service, croyant qu'il y aurait avantage à procéder de cette façon. Les nombreux diplômés peuvent entrer en clientèle privée où les revenus sont plus forts, mais, pour la plupart, ils s'embauchent au service de l'Etat, à cause du fonds de retraite et des autres avantages dont jouissent les fonctionnaires. Le gouvernement de Suède prévoit que, parce qu'il a augmenté considérablement les disponibilités d'enseignement, le nombre des dentistes augmentera sensiblement dans un avenir prochain.

Honoraires des dentistes:

L'échelle des salaires est présentement de 25,000 à 35,000 kronas (5,000 à 7,000 dollars). Cette échelle est équivalente à celle des professeurs d'universités, jugée bien élevée en Suède. Les dentistes peuvent d'une certaine façon augmenter leur salaire en consacrant plus de temps aux enfants ou en traitant des adultes. Les dentistes du service public sont considérés comme des fonctionnaires et jouissent de leur plan de retraite en plus de leurs autres avantages.

Personnel auxiliaire:

Techniciens: Il y a des écoles pour les techniciens à Stockholm, Gothenburg et Malmö. Ces écoles n'ont rien de commun avec les facultés dentaires, si ce n'est qu'elles sont dirigées par celles-ci. Le cours comprend deux ans d'apprentissage, une année d'école et une dernière année dans un laboratoire. Après avoir terminé ce cours et réussi des examens l'élève reçoit un diplôme qui lui donne le droit de travailler dans le service dentaire public. Ces qualifications ne sont pas nécessaires pour travailler dans un laboratoire autre qu'au sein du service. La plupart des techniciens travaillent dans des laboratoires et quelques-uns chez des dentistes qui sont en exercice privé. En 1950, le gouvernement a passé une loi qui a littéralement mis fin à la pratique illégale. Cette loi veut que la première conviction soit passible d'une forte amende, la deuxième passible de prison. Cette loi a rendu de grands services.

Assistants dentaires: Le gouvernement a établi dans les facultés dentaires un cours d'un an pour former des assistants dentaires. Chacun des dentistes du service dentaire public a une assistante dentaire à son service.

Hygiénistes dentaires: Aucune.

Enseignement dentaire:

Il y a des facultés dentaires à Stockholm, Malmö et Umeå. On complète actuellement les plans d'une quatrième qui sera construite à Gothenburg. Ce sont des facultés d'Etat. Quelques facultés médicales de Suède font partie d'universités et d'autres sont indépendantes. La durée des études dentaires est de cinq ans. Le gouvernement en défraie toutes les dépenses.

L'instruction est gratuite au stage universitaire; donc pas de frais de scolarité. Les instruments sont la propriété de l'Etat et ils sont prêtés aux étudiants. Les étudiants doivent cependant acheter eux-mêmes de petits instruments comme les fraises, parce qu'on s'est rendu compte qu'il valait mieux procéder de cette façon.

On peut recevoir les nombres suivants d'élèves en première année: Stockholm: 50 — Malmö: 50 — Umeå: 20. La nouvelle faculté de Gothenburg pourra en recevoir 60. Il y a deux inscriptions d'élèves par année: le 1er septembre et le 1er février, de sorte qu'il y a actuellement 10 classes qui fonctionnent tout le temps. Par conséquent, il y a deux graduations par année. Les sessions académiques (semestres) sont de quatre mois. A la fin de chaque session, il y a un intervalle d'un mois. Si l'étudiant a obtenu ses crédits d'une façon satisfaisante, il prend ce mois en congé. Cependant, si son semestre n'a pas été satisfaisant, il doit continuer pour s'améliorer. En Suède, les qualifications d'admission sont les mêmes pour toutes les facultés. On m'a dit que la médecine et la dentisterie n'accepte que les meilleurs élèves, et qu'il y a quatre fois plus de demandes que de places disponibles. On prétend que les jeunes gens suédois sont portés à choisir les professions de santé pour diverses raisons. Mais le motif qui les pousse vers ces professions est probablement le fait qu'ils font des revenus comparativement plus élevés qu'ailleurs.

Les professeurs demi-temps ont une clinique dans l'école où ils peuvent traiter leurs patients privés. On a cru que ces professeurs ne pourraient subvenir aux dépenses d'un bureau qui ne fonctionnerait qu'à demi-temps et avec ce système, la faculté peut se donner les meilleurs dentistes.

Commentaires:

Les renseignements contenus dans ces "notes" ont été recueillis sur place et peuvent être incomplets à cause du peu de temps consacré à nos visites. Voici quelques observations glanées au cours de nos voyages:

1) La qualité de la dentisterie pratiquée en Suède paraît excellente.

2) Le gouvernement donne plus d'ampleur au service dentaire public à mesure que le nombre de dentistes augmente.

3) On a augmenté rapidement les disponibilités pour l'enseignement de façon à former un plus grand nombre de dentistes. L'école de Malmö est ouverte depuis la guerre. Celle d'Umeå ne fonctionne que depuis deux ans et déjà le gouvernement se propose d'en construire une autre à Gothenburg. Grâce à leur système de doublement des classes, les écoles actuelles de Suède peuvent former 240 nouveaux par année. On m'a dit que la nouvelle école que le gouvernement se propose de construire à Gothenburg n'était pas réellement nécessaire, mais que le gouvernement a quand même l'intention de la faire. Si on construit cette école, le nombre possible des nouveaux

gradués montera à 350 par année. La Suède a une population de 7,000,000 d'habitants. (Le Canada a une population d'au moins 16,000,000 d'âmes et le nombre de ses diplômés dentaires est de moins de 200 par année. Les nouvelles écoles qu'on est à construire au Canada pourront porter ce chiffre à 300.)

4) Le service dentaire public de Suède réalise un vaste programme de traitements dentaires et toute la population peut en profiter.

Le Dr H. R. Maclean succède au Dr W. Scott Hamilton comme doyen de l'Alberta

L'Université d'Alberta vient d'annoncer que le Dr W. Scott Hamilton prendra sa retraite, comme doyen, le 1er septembre 1958. Le nouveau doyen sera le Dr Hector R. MacLean.

Le Dr Hamilton avait commencé à faire partie du corps enseignant de la faculté dentaire de l'Université d'Alberta en 1926 comme clinicien en dentisterie opératoire; plus tard, il devint professeur et directeur de la faculté pour accéder au décanat en 1946. Le Président de l'Université d'Alberta, le Dr Andrew Stewart a rendu un témoignage de reconnaissance au Dr Hamilton, en déclarant que celui-ci avait réussi à maintenir bien haut les standards de l'enseignement dentaire au cours de son terme d'office.

Le Dr Hamilton est "fellow" du Collège américain des Dentistes et du Collège Royal des Chirurgiens d'Angleterre.

Le Dr MacLean est un diplômé de 1928 d'Alberta; il est attaché à l'Université depuis 1936 et chef du service de dentisterie opératoire, depuis 1949. Il s'intéresse dès maintenant à la préparation de l'année académique prochaine et à l'organisation des locaux additionnels dans l'édifice médical.

Acquisitions récentes de la bibliothèque

BRECKER, S. C.: Clinical procedures in occlusal rehabilitation. 1958. 326 p. illus.

BURNETT, H. W.: Oral microbiology and infectious disease; a textbook for students and practitioners in dentistry, 1957. 589 p. illus.

LANDY, C.: Full dentures; the postgraduate dental lecture series. 1958. 182 p. illus.

OSTLUND, S. G.: The effect of complete dentures on the gum tissues; a histological and histopathological investigation. Pub. in Acta Odontologica Scandinavica. Vol. 16, 1958. 40 p. illus.

Serions-nous à l'âge ténébreux? —

La fluoruration soumise à un référendum . . .

La ville de New-York est l'une des principales des Etats-Unis à ne pas avoir la fluoruration. Deux projets de loi, défendant la fluoruration sans la tenue d'un référendum, furent présentés à la Législature de l'Etat de New-York le mois dernier. L'un d'eux échoua à l'Assemblée générale. L'autre se trouvait encore devant le Comité lorsque la Législature ajourna.

Le "New York Times" a consacré un éditorial à ce sujet dans les termes suivants:

"Un témoignage effarant digne de l'âge des ténébreux"

"Personne autre qu'un homme de sciences, une autorité en médecine ou en art dentaire n'a la compétence voulue pour juger de son efficacité. Comment un simple citoyen pourrait-il donc trancher la question? Fallait-il attendre son vote, quant à la pasteurisation du lait ou la vaccination, avant de permettre aux personnes responsables d'établir des mesures de sécurité pour la santé publique? L'adoption d'un projet de loi aussi illogique serait un témoignage effarant digne de l'âge des ténébreux. Nous pouvons croire maintenant que le Sénat votera pour déclarer que la terre est plate ou annuler la loi de gravité!"

Découpures de journaux

Les libéraux prétendent que les notes de dentistes sont compris dans le plan de santé.

Ottawa — "Le parti libéral conserve comme article à son programme l'établissement d'un plan de santé qui couvre les déboursés pour les notes de médecins, de chirurgiens et de dentistes. Cette décision a été prise aujourd'hui, par les délégués, à leur réunion pour choisir un chef de parti, quand ils ont adopté leur politique de sécurité sociale en sept points. En 1919, quand le parti libéral avait choisi Mackenzie King comme chef, on avait pour la première fois préconisé une formule d'assurance-santé. La réunion a aujourd'hui approuvé de "trouver une forme d'assurance-santé contre les dépenses occasionnées par la médecine, la chirurgie et la dentisterie. . ."

Cette question n'est pas nouvelle, mais ce qui est nouveau, c'est la mention des "notes de dentistes."

SHAW, S. I.: Clinical applications of hypnosis in dentistry. 1958. 173 p. illus.

SOUTHWOOD, S.: A dentist's compendium. 1957. 87 p. illus.

STREAN, L. P.: Cortisone in dentistry. 1957. 178 p. illus.

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Succinylcholine in Dental General Anaesthesia

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INTRODUCTION

The Memoirs of Dr. J. Heidbrink were published recently in the Journal of the American Dental Society of Anaesthesiology. In the first instalment, he described some of his experiences in general anaesthesia using nitrous oxide at the turn of the century. As I read Dr. Heidbrink's description of several bizarre experiences with "laughing gas", I couldn't help but think how few changes had been made until ten years ago. The utilization of oxygen under pressure and a more dependable method of measuring its proportion with nitrous oxide were the only two significant advances in over forty-five years.

The introduction of trichlorethylene as

an adjunct to nitrous oxide and oxygen provided a combination of agents which allowed a greater percentage of oxygen to be included in the mixture. Up to this time, the same advantage could have been gained by the addition of ether into the system, but the hazard of explosion and the inconvenience of nausea precluded its use. Divinyl ether, because of its highly explosive potential in oxygen, was also treated with warranted circumvention.

Induction could still be stormy and maintenance difficult until the introduction of thiopental sodium. Here at last we were provided with the means to carry the

*Delivered at the Great Lakes' Society of Oral Surgeons, Columbus, Ohio, 1957.

patient through the dangers of induction with its attendant excitement to surgical anaesthesia without incident. Here too, it was at last possible to maintain anaesthesia with the much criticized and much maligned nitrous oxide gas in combination with a percentage of oxygen which could not interfere with physiological processes.

It was not an unmixed blessing, however, and there were difficulties which arose as this new drug was used. The complication of laryngeal spasm was not frequently encountered but its precursor, stridor with embarrassed respiration, occurred reasonably often particularly in the colder seasons. This might be explained by the tendency on the part of a significant proportion of the population either to be recovering from or commencing a bout with the common cold at that time of the year.

The remedy for this situation was invariably deeper anaesthesia with pentothal which encouraged another objectionable feature, prolonged recovery time. In short, most of the anaesthetic problems with pentothal were traced to light anaesthesia with the resultant lack of relaxation and increased laryngeal sensitivity. In the resistant patient without the aid of a relaxant, the tension on the jaws can be great enough to threaten the stability of the teeth or the areas in the mouth which have been surgically prepared.

It is true that the airway problem is solved by the use of a relaxant and the insertion of an endotracheal tube but this again implies deeper anaesthesia as well as the possibility of a very sore throat.

From a purely clinical standpoint, we have found that our relations with the patient were adversely affected by prolonged inebriation after anaesthesia. The pleasant induction which the patient accepted with eagerness was counterbalanced in the patient's mind against the period of disorientation which followed the procedure.

SUCCINYLCHOLINE INTRODUCED

The introduction of succinylcholine in the form of a drip solved many of these problems. It provides a controlled degree

of relaxation under comparatively light anaesthesia which allows the maintenance of the mouth prop in position with a minimum of tension on the patient's jaws. By maintaining a degree of relaxation which does not produce paralysis of the muscles of respiration, the hypersensitivity of the larynx is reduced and coughing is practically eliminated. Should it occur, the rate of the drip can be increased to a point where the obstruction by the pharynx and larynx in spasm is overcome. Should respiratory arrest occur, manual breathing for the patient is carried out with the re-breathing bag until spontaneous respiration is re-established.

Since the drug is destroyed rapidly,¹ two to three minutes after removal, it is of assistance in cutting down recovery time. Deeper anaesthesia was necessary with pentothal alone, not so much for its analgesic effect as to overcome some of the objectionable features previously mentioned as well as to control movement of the patient in the chair. This last objection was evident only in light anaesthesia and it is conceded that the patient was not aware of pain as such but did react to stimulation to the point where treatment could not be successfully carried out.

A STUDY ON THE EFFECT OF SUCCINYLCHOLINE

To demonstrate that lighter pentothal anaesthesia could be successfully used in conjunction with a succinylcholine drip with the resultant shortened recovery time, Dr. R. S. Locke² of Toronto under the direction of Dr. Monheim of Pittsburg carried out an interesting series on a group of one hundred and three patients.

The first fifty-two procedures utilized succinylcholine as an adjunct to the general anaesthetic. The other fifty-one patients who did not receive succinylcholine were used as a control group. To insure a rapid emergence from the anaesthetic, thiopental sodium two per cent was used for induction purposes up to the point where the eye reflex was sluggish or abolished. Nitrous oxide, oxygen and trichlor ethylene were used for analgesia and .2%

succinylcholine intravenous drip in 5% glucose for relaxation.

The results of his study showed that there was markedly less movement which interfered with the operator than in the control group, also a larger number of patients in the group not receiving succinylcholine required the addition of further quantities of pentothal after the induction dose. There was a notable difference in recovery time in favor of the group receiving succinylcholine.

APPARATUS EMPLOYED

The apparatus necessary for the administration of succinylcholine in conjunction with thiopental sodium is the simple addition of one three way stopcock to the equipment evolved by Dr. William Ewing of Akron, Ohio. This allows the administration of pentothal from the syringe or the direct access of the drip into the system leading to the patient. Induction is carried out with pentothal, then the drip is started at about 60 drops per minute as the nose piece is placed in position and a mixture of nitrous oxide 70%, oxygen 30%, administered to the patient. The desired degree of relaxation is produced by regulating the rate of the drip against the resistance of the patient's muscle tension. It is most desirable that the patient's respirations not be interfered with and if there is evidence of this occurring the drip is slowed down until they have regained their amplitude.

When the procedure has been completed, straight oxygen is administered and the drip shut off but the needle is left in place until the patient has regained consciousness. This obviates the necessity of re-establishing the intravenous in an emergency. The recovery is most dramatic, with very little cerebral depression.

MODE OF ACTION

Succinylcholine is the dicholine ester of succinic acid and is broken down by serum cholinesterase into succinic acid and choline both of which are innocuous degradation products. It produces its effect

by a depolarizing action on the motor end plates of skeletal muscles. This depolarizing activity is thought to be a successful competition with acetyl choline at the receptor site, preventing the stimulation of muscle. A .1% or .2% solution in 5% glucose is compatible with a 2% pentothal solution in distilled water.

Before using the drug by the drip method we employed it for breaking a spasm already in progress in amounts ranging from five to twenty mg. intravenously. After intravenous injection the drug is carried by the blood into the capillaries. In order to reach the end plate, the site of action of succinylcholine, the drug has to leave the capillaries and it must diffuse through the extracellular space. Clinically the relaxation of the glottis following injection occurs with such speed that one can only conclude that this action of crossing the capillary walls and travelling through the extracellular space toward the end plate must be a rapid process.³

In spite of the short duration of action usually experienced with succinylcholine there occurs with some patients a prolonged apnea, a condition for which there is no completely satisfactory explanation. It has been shown that the inactivation of the relaxant may be delayed if the quantity of cholinesterase in the serum is below normal. Individuals falling into this category include those with chronic debilitation associated with a low blood volume, those who are acutely ill and with a disturbed electrolyte balance and those with severe anaemias, particularly associated with recent haemorrhage.⁴ However, it has been demonstrated that apnea may occur in those patients whose serum cholinesterase is within an average determination.

Dr. Werner Kallow of the University of Toronto's Pharmacology Department⁵ has sought to explain this phenomenon by postulating the existence of two types of serum cholinesterase which may be present in different samples of serum in varying quantities. Since the activity of serum cholinesterase is measured accord-

ing to its ability to inactivate acetyl choline, it is thought that both types are equally effective on this substance while only one acts on succinylcholine. There is some evidence that this tendency toward an ineffective cholinesterase may be an inherited factor. Indeed, research work which is presently being carried out in connection with large numbers of mental patients who are receiving electro-shock therapy would rather incline one to this belief. It still remains to be demonstrated more conclusively.

It is also of interest to note that those patients receiving massive doses of succinylcholine (100 mg. i.e. 200 mg. doses every 2 minutes) there is no drop in the serum cholinesterase since the reaction is purely enzymatic and catalytic. Several unfavourable side effects were demonstrated by succinylcholine when used in high concentrations. Among the most important was the appearance of massive fasciculations prior to the onset of muscular paralysis which consisted of diffuse and uncoordinated contractions of various muscle bundles or groups. This feature has not been observed using a .1% solution in the manner described. There was also a slight rise in blood pressure recorded during administration which returned to normal within 10-20 minutes after completion of the injection.

PRECAUTIONS

Finally might I inject a word of caution in the employment of this drug for which at present there is no known antidote. Although it has been shown that the barbiturates, morphine, and atropine do not alter cholinesterase activity, substances such as neostigmine are contraindicated.

Clinical doses do not affect transmission in the autonomic nervous system. Increased salivation has been noted in a number of patients during light general anaesthesia or during emergence from anaesthesia. This might be explained by the parasympathomimetic activity on the part of the drug. Such salivation is not

encountered in uncontrollable quantities as is sometimes true of other relaxants.

Central respiratory depressant effects have not been noted when using succinylcholine as a continuous drip, furthermore succinylcholine does not appear to liberate histamine in man, or at least liberates an amount that is less than one one-hundredth of the amount produced by d-tubo curare.⁶

CONCLUSIONS

In conclusion I might emphasize that succinylcholine has no analgesic or anaesthetic properties, that it is entirely possible to produce respiratory paralysis without loss of consciousness. Inadequate anaesthesia cannot be compensated for by further relaxation because this action will not diminish the patient's awareness of pain.

Care must be taken to ensure the patient has an adequate exchange of tidal volume during anaesthesia. If the tidal volume is reduced to an inadequate level for a period of time, hypoxia will be produced with its attendant dangers. Assisted respiration from time to time may be necessary to prevent this occurrence. In the event of respiratory arrest, a slow rhythm is preferred since hyperventilation serves only to prolong apnea.

The ideal anaesthetic may never be developed in spite of our hopes and aspirations. I do feel, however, that the addition of succinylcholine to our armamentarium is a step in that direction.

BIBLIOGRAPHY

1. Little David M. et al — Succinylcholine (Diacyetylcholine): A Controllable Muscle Relaxant — Current Researches in Anaesthesia and Analgesia 32. 171-180 (May-June) 1953.
2. Locke, R. S. Succinylcholine as an Adjunct to General Anaesthesia in the Dental Office. Canadian Dental Association Journal, Feb. 1957, Vol. 23, No. 2.
3. Kallow, Werner — The Relation of Plasma Cholinesterase to Response to Clinical Doses of Succinylcholine. Can. Anaes. Soc. J., Vol. 3, No. 1, Jan., 1956.
4. Borders, R. W. et al — The Interrelationship of Succinylcholine and the Blood Cholinesterase During Anaesthesia. Anaesthesiology, Vol. 16, No. 3, pp 401-422, May, 1955.
5. Personal communication.
6. Thesleff, S. An Investigation of Succinylcholine Iodide in Man — Acta Physiol Scandinav 25. 368-376 (June) 1952.

The Highway to Good Occlusion

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The aim and purpose of dentistry is to help obtain and maintain a healthy, serviceable occlusion. We all know that a good, well-balanced occlusion is essential for the healthy, long retention and service of the teeth to the individual. It is with this in mind that every dental service is performed. The tooth is filled, the periodontal treatment performed, and even the abscessed tooth extracted with the one ultimate aim of improving existing dental health so that the dentition may more effectively serve the individual over a longer period of years. We have seen advances made in all branches of dentistry. In recent years the particular emphasis has been on prevention, and rightly so. Excepting accidents of a physical nature, teeth may be lost in two ways; either because of caries or due to irreparable periodontal damage. A good, well-balanced occlusion is of paramount importance in resisting the ravages of both these conditions.

Now granting a good occlusion is to be desired, how can we help Nature in the process of developing satisfactory occlusion? There are several ways. In order to recognize the abnormal, or variations from the normal, we must first be prepared to recognize the normal.

Let us now apply prevention to this field of occlusion. It is possible for us to observe the developing occlusion and anticipate either favourable or unfavourable conditions. At 3½ years of age, after the primary teeth have completely erupted, we expect to find the maxillary deciduous cuspids occluding one-half tooth distal to

their mandibular counterparts. Depending on the corresponding mesio-distal width, the upper deciduous second molars may end one-half tooth distal of the lower second deciduous molars or their distal surfaces may end on an even plane. If the teeth in occlusion vary from this, we can certainly predict future occlusal difficulties. For example, if the upper deciduous cuspids are end to end or one-half tooth mesial to the lowers, we have a disto-occlusion, a difference in the rate of antero-posterior development of the two dental arches. This, of course, may be an inherited growth pattern. In order to give the mandible every chance to catch up in its forward growth, we can "unlock" the occlusion by using a diamond disc to reduce, on a 45 degree angle, the labial incisal surface of the lower cuspids and the lingual incisal surface of upper cuspids. This will allow the mandible in occlusion to slide forward without occlusal interference. Occasionally it is necessary to relieve certain interfering cusps of all second deciduous molars to facilitate this anterior slide. The purpose of this is to remove antero-posterior interference so as to encourage the mandibular growth forward to catch up with the maxillary growth, and thereby prevent the otherwise certain disto-occlusion of the secondary dentition. This is more likely to be successful if done before the permanent first molars erupt.

It is important for us to know the most desirable order of secondary tooth eruption. In the mandible, the desirable sequence is first molar, central, lateral, cus-

pid, first bicuspid and second molar, and in the maxilla, first molar, central, lateral, first bicuspid, cuspid, and second molar.* This knowledge helps us to know if the secondary teeth are erupting in other than normal sequence. If, for example, the lower first bicuspid erupts before the cuspids, the chances are the cuspids will be blocked out or produce anterior crowding. When we see this occurring, we should disc the mesial of the lower second deciduous molars so that the lower first bicuspid will erupt more distally, thus giving the cuspids more room in which to erupt. If the lower second molars erupt before the lower second bicuspid, then we may have to use a space maintainer or some other means of preventing the first molars being moved too far mesially when the second deciduous molars are lost. Of course we must keep in mind that the order of tooth eruption is only one of several guide posts in making our diagnosis.

If the width of the lower permanent centrals and laterals is greater than the space from deciduous cuspid to deciduous cuspid, we are bound to have crowding, or in some cases the ectopic and premature loss of either or both the deciduous cuspids. If the lower laterals erupt lingually and slightly crowded, we can help the situation by discing the mesial of the lower deciduous cuspids to produce a greater mesio-distal space into which the lower laterals may erupt. The tongue pressure will usually aid in positioning the lower laterals if sufficient space has been provided before they are fully erupted. If not, elastic pressure to the lower laterals can be employed to help the realignment. A similar process can be utilized in dealing with the upper anterior region containing the permanent centrals and laterals and the deciduous cuspids.

The timing of tooth eruption is very important. Normally the lower first deciduous molars should be shed as the lower cuspids begin to erupt. Also the lower second deciduous molars should be lost

as the lower bicuspid are erupting. This does not always happen and a malocclusion frequently occurs as a result. We know, for example, that the lower cuspids are larger mesio-distally than their deciduous predecessors. Hence if the cuspids should erupt before first deciduous molars are shed, anterior crowding may possibly occur. We can help this situation by discing the mesial surfaces of the lower first deciduous molars, thereby providing more mesio-distal arch space into which the cuspids may erupt. We can likewise aid the lower first bicuspid to erupt by discing the mesial of the second deciduous molars. A similar program may be carried out in the maxillary arch as the first bicuspid are erupting.

The mesio-distal width of the secondary teeth and the pre-determination of lateral arch space is of prime importance in our diagnosis. As a result of the research of Drs. Ballard, Wylie, Greiwe and others, we can now predict accurately the lateral arch space required for cuspid and bicuspid eruption in each of the four lateral segments. For each mandibular lateral segment we require ten millimetres plus one half of the sum total of the mesio-distal widths of the lower central and laterals measured individually in millimetres using a boley gauge. The maxillary lateral segments require 11 millimetres, plus the same one half measurement of the lower centrals and laterals. With these rules to guide us, we can now estimate, as soon as these teeth have erupted, whether or not we will have sufficient arch length from the first molars to the laterals on both sides for the secondary tooth eruption. However, since the first molars usually move mesially when the deciduous second molars are lost and before the second bicuspid have erupted, we should have about 1.5 mm. for each lateral segment in excess of the required lateral space if we are to be sure of the eruption of the second bicuspid without crowding. If, however, we have just sufficient lateral space, then we must be prepared to prevent the first molars shifting

*Result of research of Dr. Robert Lo and Dr. Robert Moyers.

mesially after the second deciduous molars are shed. If all permanent centrals and laterals are crowded or lapped, we will need extra later space to allow for their repositioning into the arch. This extra space needed must also be added to that already required for the eruption of the cuspids, and first and second bicuspids. By using a boley gauge to measure from the mesial of the first molars to the mesio-labial corner of the deciduous cuspids or distal of the laterals we can obtain the lateral space available. If the centrals and laterals are crowded, we can measure between the mesio-labial corner of the right deciduous cuspids to the left. This subtracted from the sum total width of the centrals and laterals measured separately with a boley gauge will give us the extra space we will need to realign anteriors. All this measuring can be done faster than it takes to explain the procedure. It should be done routinely and the measurements recorded. We are then in a position to form an opinion as to the possible need of present or later orthodontic treatment.

We should note in what order the permanent first molars erupt. Normally the lower molars erupt about 6-8 months ahead of the uppers. If the upper first molars erupt considerably ahead of the lowers, then we know that the forward growth of the maxilla is ahead of that of the mandible, and a distal or Class II occlusion is developing. If the lower molars erupt more than a year ahead of the upper first molars, we often find a Class III or mesio-occlusion malocclusion.

By about 7-8 years of age, we should be able to feel the labial bumps of the crowns of all cuspids apically and slightly distal to the laterals. If we cannot feel these bumps, then radiographs should be made to establish if the cuspids are erupting normally. Clark's Law may be utilized to determine in what labial-lingual relationship an unerupted tooth is lying. Briefly, this law depends on the difference in appearance of an unerupted tooth as seen in two radiographs taken at the

same point with a ten degree mesio-distal difference in x-ray tube position. If the unerupted tooth, e.g. the upper right cuspid is lingual to the dental arch, then the image in relation to the upper right lateral appears to move in the direction of the x-ray tube, as seen by comparing the two radiographs. The converse holds. If the unerupted tooth is labial to the arch, the radiograph shows the image to have moved distally when the x-ray tube was moved mesially. No change in the relationship with the adjacent erupted teeth is noted in the two radiographs when the unerupted tooth is in the same labial-lingual relationship. If, for example, the upper right cuspid is found to be linguallly positioned, what then? In this case it is usually advisable to remove the maxillary right deciduous cuspid when and if the root of the permanent cuspid is partly developed and the root of deciduous cuspid is not resorbing. This is quite a general rule and we should compare the upper right cuspid area with the opposite upper left area to see if there is a difference in development of the left permanent cuspid and resorption in the root of the deciduous cuspid.

Cross-bites are common among the malocclusions we see in our offices. A single anterior cross-bite may sometimes be treated by finger and cotton roll pressure on the lingual of the maxillary tooth and the labial of the mandibular tooth. At the same time pressure should be exerted against the chin to push it back and up. After holding these pressures for about five minutes, have the child curl the tongue back into the throat and slowly close. At the same time release the pressure on the chin and mandibular anterior. If the roots of the anterior teeth have not entirely formed, we may be successful in obtaining a slight labial locking of the maxillary anteriors over the mandibular anteriors. Once successful, we maintain the backward and upward pressure on the chin for another five minutes. The parent is instructed on how to repeat this position several times a day, and

"Junior" is instructed on how to bite hard once the desired position is attained. If carried out regularly for a few days, the teeth will be sufficiently repositioned to enable the child to continue the process at will, and during function. In other cases this is not successful and we may have to use a simple appliance. A maxillary central band with a lingual incline extension to contact the labial of the mandibular anterior, may be enough to cause the desired result within a few days. A simple acrylic incline cemented on the mandibular anteriors with temporary cement, may also be used. Here also, the force of biting will move the maxillary anterior labial into the desired position. One word of caution. In the use of inclines, the bite may be opened a millimetre or two in a short time. For this reason inclines are not suggested in treating anterior cross-bites unless the locked-over bite is greater than two millimetres. In shallow over-bite cases, we should use spring force to the maxillary anteriors off a lingual arch or bite plate; this prevents the bite opening during correction of the cross-bite. Posterior single tooth cross-bites may be simply corrected by wearing cross-bite elastics from a lingual hook on a band on the lingually-placed tooth to a buccal hook on a band on the buccally-placed tooth. If the upper and lower midline is off, then a lingual arch may be used to expand the whole arch. This allows the mandible to return to centric, thereby correcting both cross-bite, and midline.

Ectopic eruption is most common in the deciduous second molar and cuspid areas. If this occurs in the deciduous cuspids on one side, then we may help prevent the usual lateral shift of the anteriors by discing the mesial of the primary cuspid on the opposite side of the arch. In most of these cases however, this is only a temporary aid in saving the midline and serves only to lessen, partly, the overall malocclusion. Where the permanent first molars are erupting ectopically, we may try to prevent the premature loss of the second deciduous molars by inserting a

separating wire if possible between the second deciduous molars and the first permanent molars. By tightening this at regular intervals, we may be able to tip the first molars distally and thereby save the second deciduous molars and retain arch length. In some cases this is not possible. Discing the distal of the second deciduous molars may allow us to slip a band over them and guide the permanent molars into the arch. Another way may be to place a spring on a band on the second deciduous molars to tip the first molars distally. All of these may fail and the deciduous molars may be lost. Then a space regainer is indicated to tip the first molars distally. This may then be adapted to act as a space maintainer.

Spaced anteriors and fraenum cases are a source of concern to parents and patients alike. We can often close this space by wearing light latex elastics about the upper centrals or central to opposite lateral. Once together, we may ligate the teeth and hold while the upper cuspids are erupting. If an abnormal fraenum is present, and extends between the centrals to the lingual, it should be removed during this ligating period. In spite of holding the anteriors together for some time, a space may still reappear between the centrals if the centrals and laterals are insufficient in total width to fill the space between the cuspids. In such cases, the upper cuspids are sometimes moved against the laterals and a tight contact produced between the first bicuspid and the cuspids by means of inlays or three-quarter crowns on the first bicuspid.

One of the most disconcerting malocclusions we see is the anterior open bite. It is a sign that environmental forces are interfering with the normal vertical development. We often find a history of a sucking habit, and always a tongue which functions between the anterior teeth. We are able to observe the tongue thrust between the teeth when swallowing, in speech (particularly the "th" sound), and often in the rest bite position. It is obvious that in order to correct this condition, we

must control the tongue and prevent it functioning between the anterior teeth. Many ways of "blocking" the tongue have been evolved. Perhaps the simplest is to cement bands on the deciduous centrals or the permanent centrals with cribs soldered to their lingual surfaces. A crib is made of .029 wire soldered to the lingual of the band and then bent in the form of a flattened spiral to extend lingually to, and down about one-eighth to one-quarter of an inch below the incisal surfaces of the lower deciduous centrals and laterals or of the permanent centrals and laterals. It is bent laterally to cover the space behind both the lateral and central incisors. The cribs must be lingual to the lower anteriors when the posterior teeth are in occlusion. In this way the cribs prevent the tongue being placed between the anterior teeth in swallowing, speech, and at rest. The normal forces of development can now act without interference, and we find an increase in the vertical development occurring. Lip, tongue, and speech exercises are used in conjunction with the cribs. The cribs, incidentally, prevent, immediately, any continuation of sucking habits. The length of time it takes for the open bite to close varies with the age of the child and the severity of the open bite. When the cribs are on the upper deciduous centrals, the bite closes much more rapidly than when on upper permanent centrals. On late teenagers and young adults wearing cribs, we occasionally find that the tongue may want to reposition itself laterally and open the bite in the bicuspid regions. In such cases it is wise to discontinue this form of treatment. In older children the vertical development may be much slower and more complicated treatment may be necessary. In protrusion cases we find the bite closing but maxillary anteriors are not retracted by wearing cribs. After the bite is closed, the teeth may be retracted by use of a bite plane and elastics, or other appliance therapy.

We recognize that some malocclusions may be the result of inherited growth in-

equalities. Others, however, are caused by environmental factors. Some of the main factors in directing and guiding the developing occlusion are the forces exerted by the oral and facial muscles. The tongue, by reason of its position, size, and movements in speech and swallowing, creates active outward forces upon the dental arches and teeth. These forces, when normal, stimulate the desired normal growth and development of the jaws. The muscles of the cheeks and lips create inward or restraining forces on the dental arches and teeth. These are in apparent opposition to the outward forces of the tongue, but are equally important in the development of a normal occlusion. The balance between these inward and outward forces is referred to as the "lips-tongue-muscle balance". This muscle balance helps to decide the form of the dental arch and the alignment of the teeth within each arch. Any abnormal force, if applied sufficiently, may upset this muscle balance, and in so doing create a malocclusion. The tongue is perhaps the most important single factor when abnormal forces are being considered. Conditions such as infant sucking habits, improper bottle feeding, abnormal tonsils and adenoids, nasal congestions, etc., may be the cause of the tongue taking up abnormal positions and thereby producing abnormal forces on the dental mechanism. The same conditions usually cause the lips to remain open. This situation creates a lack of labial restraint on the maxillary anterior teeth and an over-restraint on the teeth of the lateral segments. An improper muscle balance of this nature tends to perpetuate itself and usually gets worse. The resulting malocclusion continues to deteriorate.

Obviously we are desirous of preventing this state of affairs before the cycle begins. We can aid the prevention program by educating parents along preventive lines. For example, we can advise parents to hold their child's lips closed for a few breaths whenever they check the baby's covers during sleep. Normal function can

be stimulated by the use of a short nipple on the baby's feeding bottle. This also encourages a normal functioning, properly placed tongue. The nipple should have a sufficiently small hole to ensure that baby's sucking instinct will be satisfied during the feeding and thereby lessen the possibility of abnormal sucking habits being started.

Sucking habits should be discouraged at their inception by use of a snuggle-bunny sheet on the crib, mitts, etc. Colds should be avoided since they tend to initiate mouth breathing. As you can see, these suggestions we give to parents, are to help parents prevent the start of an abnormal cycle of habits which, if continued, leads to malocclusions.

We are often not consulted until this abnormal cycle of habits has been in operation for some time. At this stage we wish to prevent further abnormalities, and, if possible, aid the facial muscles to return to normal function. By this time, the child is usually old enough to co-operate to some extent. We now introduce myofunctional therapy to aid the child in achieving normal lip and tongue function. It is important to explain, (thoroughly and kindly,) and demonstrate these exercises to the child in the presence of the parent or parents. The child should practise them under our supervision until we are sure the child and parent both understand their purpose, performance, and the importance of doing the prescribed exercises. The following is a number of exercises that have been of proven value in my practice. I tick off the exercises to be practised, and ask the parent to tack the exercise sheet in the child's bedroom where it may be read over by the child at least every other day.

A PROGRAM FOR THE CORRECTION OF ORAL MUSCLE FUNCTION

These exercises are intended, over a period of time, to aid the child in achieving normal tongue position, lip closure, nasal breathing and correct swallowing. They are very important in conjunction

with orthodontic treatment in helping to attain and maintain a normal, well-balanced occlusion.

The Tongue

1. The tongue, at rest, should lie passively in the mouth, preferably with the tip of the tongue curled slightly downward. In this position the top of the tongue fills the vault of the mouth.
2. In the act of swallowing curl the tip of the tongue down behind the lower front teeth as when whistling or saying "A". Keep the lips and back teeth closed when swallowing.
3. Drink three to four small glasses of water, fruit juice, etc., daily (about ten individual swallows), as instructed in No. 2.
4. Place a raisin on the back of the tongue, as directed, and hold against the roof of the mouth while the tip of the tongue is held curled down in the "A" position back of the lower front teeth.

The Lips

5. Tape the lips at night using two three-inch lengths of about a quarter of an inch wide cellulose tape in the form of an X. Lips should be curled so as to hide the vermilion border if possible before taping. This holds the lips together in the middle, but does not seal them shut.
6. At night the child should be encouraged to hold the lips together while going to sleep.
7. Hold a piece of cardboard, about the size of a postage stamp, between the compressed lips while reading, doing homework, listening to the radio or television, and at other odd times during the day.
8. Blow under the upper lip and hold under tension for about four breaths, then relax. Repeat this twenty-five times while going to sleep. Begin with five or ten times and gradually increase the number as the lip becomes stronger.
9. Endeavour by self-reminding to keep the lips closed and breathe through the nose at all times.
10. Agree on a reminder whereby your parents may remind you when your lips are open (for example, touch the chin or snap the fingers).
11. Keep the lips closed when eating.
12. Each time the parents check the child's covers, they should also check the child's lips. If the lips are open, lightly

close them and hold for two or three breaths.

13. With the back teeth closed, read aloud for five or ten minutes each day.

Number five is rarely used and then only on older teenagers who become very zealous in their cooperation and wish to hurry the process of lip closure. Number thirteen is used where a "th" speech dysalia is present. In these cases the child protrudes the tongue between the anterior teeth when saying any word with "th" in it. If continued, of course, this habit helps to establish and maintain protrusions, open bites, etc. The remaining exercises probably require no explanation.

DISCUSSION

Prevention has been the keynote to this paper. However, we cannot prevent all malocclusions; some must be treated either in our offices or elsewhere. In referring cases, it is wise to do so as soon as it is felt some treatment may eventually be necessary; do not wait until the time you feel treatment should be started. An early referral allows the person treating the case time in which to observe the child's development, and ensures the patient being treated at the most opportune time. This also assures the parents that you have their child's best interests at heart. I raise this point because almost invariably parents of a child referred for an orthodontic consultation will ask if their child should have been treated earlier. They are pleased to hear that their dentist has made an early diagnosis and referred their child in plenty of time.

Perhaps something should be mentioned about the time orthodontic treatment should be started. Early treatment is desirable when there is interference

with the child's normal growth pattern. This usually refers to posterior crossbites, which cause a deflection of the midline. In my office, anterior open-bites are also treated between two and one-half and four and one-half years of age. Appliance therapy is confined to simple crib attachments to bands on upper deciduous centrals for the purpose of repositioning and retraining the tongue, to allow the open bite to close. The majority of malocclusions are treated in the mixed dentition stages. Extraction cases, rotations, or other intra-arch alignments, some bite-opening problems, and of course all neglected conditions, may be treated in the secondary dentition stage. We should keep in mind, however, that every case is different, and requires an individual diagnosis before method and time of treatment can be determined.

CONCLUSION

The human body is an ever-changing mechanism. Before our eyes, each day, we see many exciting, interesting and important changes occurring in endless succession. Each change is a part of an overall scheme of the individual's growth and development. Each change enfolds a clue to the future. Dentistry is on the main highway to occlusion. Dentists are privileged to observe and direct the traffic on this highway. It is also our duty and responsibility to so guide, that the dental destination of our patients will be on the well-balanced, functional highway to good occlusion. By accepting this challenge, we lift the profession of dentistry ever higher in its rightful place among the healing arts.

1 Heath St. West

A stannous fluoride-calcium pyrophosphate dentifrice containing in addition 1 per cent of a calcium sequestering agent, insoluble sodium metaphosphate, has been clinically tested. When used by 6- to 15-year-old children for 1 year the reduction was 25 and 23 per cent, respectively, when the DMFT and DMFS indices were used. Both reductions were statistically significant.

Joseph C. Muhler, Journal Dental Research—June 1958

Attempts to Isolate a Virus from Infected Root Canals and Periapical Tissues, Using Monkey Kidney Cell Cultures

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INTRODUCTION

1) *Practical observations.*

Spanning a period of eight years, prior to the undertaking of the above task, many chairside observations were made, which somehow suggested that viruses and the varied diseases they engendered in humans, left their mark prior, during, or after their course, on teeth and their supporting structures.

a) Following routine treatment of septic root canals, with surrounding granulomas, and attainment of sterile cultures, many pathological areas never resolve completely. Is there then some heterologous antigen besides bacteria, which prevents complete healing of a supposedly sterile area?

b) Teeth often ache and pain days prior to the onset of colds, influenza, or virus pneumonia. These teeth are usually exposed, non-vital, or possess deep restorations. Following recovery from the above viral infections, pain in the oral cavity may cease abruptly.

c) During measles, German measles, mumps, herpetic gingivostomatitis and herpangina, gingival tissues tend to bleed easily, yet following the above mentioned self-limiting viral diseases, there is a decided improvement. In these cases we may well query the secondary trailing effects, possibly reflecting an adapted cytopathogenic viral attack, upon the gingivae.

Viruses have become medically fashionable. Diagnostically, a host of ills

are wrongly attributed to them. Many fundamental discoveries in this field may be in the offing, to be followed by their application towards mankind's benefits.

d) Although the first phase of polio is definitely established to be alimentary . . . followed by viremia; the spread of the virus into the blood stream, following initial entry through carious teeth and diseased pulps has not been disproved.

"The next day all five of the oldest children were brought to the hospital. (Akron, Ohio, Summer of 1941) to have their tonsils and adenoids removed. In addition the four oldest had several teeth extracted. The operations were done under ether anaesthesia without any difficulty.

"Two days after their admission to hospital, three of the children were dead. Similarly during this entire period the youngest child who had not been operated on, and the mother and father remained perfectly well. (1).

Here the dentist asks: Was there acute viremia of the poliovirus from focally infected periapical tissues?

THEORETICAL OBSERVATIONS

Mendeléeff the theoretical chemist (1834-1907), discovered the periodic law, in which he prophesied that a host of new elements would be discovered, and furthermore accurately listed their chemical properties.

Of some sixty viral diseases, pathogenic for man, all may be clinically grouped

based on their primary pathogenic tropism, as follows:

- 1) Dermotropic viruses. e.g. Warts, molluscum contagiosum, foot and mouth disease.
- 2) Neurotropic viruses. e.g. Rabies, poliomyelitis, Zoster, encephalitis.
- 3) Hepatotropic viruses. e.g. Yellow fever, serum hepatitis, infectious hepatitis.
- 4) Enteric viruses. Echo viruses, Coxsackie, poliovirus.
- 5) Pneumotropic viruses. e.g. Common colds, influenza, virus pneumonia, adenoviruses (APC, RI, ARD).
- 6) (a) Neoplastic viruses. Hodgkin's disease? Acute leukemia?
(b) Neoplastotropic viruses. Adenoviruses destroy 90% of uterine cancer.
- 7) Pantropic viruses. Mumps, measles, German measles, herpes.
- 8) Maxilla-dentotropic viruses?*

Similarly Andrewes has shown that it is possible to arrange viruses in a series which ranges from agents causing almost pure necrosis to those which induce only tissue proliferation.

God has given Nature the power to attack and parasitize all three embryonic layers of tissue, and since man's teeth are an embryological invagination of skin, and the latter is parasitized by a host of viral diseases such as smallpox, measles, warts, chickenpox, herpes etc., we see no theoretical reason why teeth and their supporting structures be spared, even though they be far more refractory to parasitization.

A clear observation by N. M. Gregg, an Australian ophthalmologist, in 1941, showed that embryonic dental tissue can be parasitized by the German measles virus, especially during the first trimester of pregnancy.

"Abnormalities of the teeth appear to be another common result of maternal rubella and consist of delayed eruptions, imperfect enamel, and a predisposition to caries . . . The full significance of Gregg's observation may not yet have been measured . . ." (2).

*My own term. A theoretical suggestion to fill a void in academic virology, as yet lacking controlled scientific evidence.

A host of papers on the teratogenic effects of influenza, herpes, mumps, measles and other viruses on the three embryonic tissue layers, appear regularly in the research Journals. (3-5).

An interesting general analogy regarding dental caries and periodontal lesions, versus varicella and zoster, as regards immunity is proffered.

a) The rate of enamel and dentine parasitization after the age of twenty-five is negligible, yet the supporting structures become increasingly amenable to cytopathogenic deterioration, of a chronic nature, in the third, fourth and fifth decades of life.

b) "It is believed that there is now sufficient evidence to consider chickenpox (varicella) and Zoster (shingles) as different clinical manifestations of infection with the same virus." (6).

Adults, in contact with chickenpox cases in hospitals or elsewhere, may be parasitized by the virus, with clinical signs and symptoms of Zona. Furthermore, deliberate injection of the vesicular contents into a non-immune youngster, will produce a clinical chickenpox entity.

PROLOGUE TO EXPERIMENTATION

A memorandum (Nov. 1956) was forwarded to Dr. G. de Montigny, head of the oral surgery department, who in turn approached Dr. A. Frappier, director of The Institute of Microbiology and Hygiene. The latter in consultation with Dr. V. Pavilanis, head of department of virology acceded to a request that ten cell culture experiments be performed, the cost to be borne by the above Institute of the Université de Montréal.

MATERIAL AND METHODS

Under Dr. V. Pavilanis' guidance, the procedure for future investigation was outlined.

- (1) Initial study for one week, of cell cultures in the Department of Virology.
- (2) Inoculation of monkey-kidney cells, with pathogenic material from root canals and granulomatous areas. These tubes

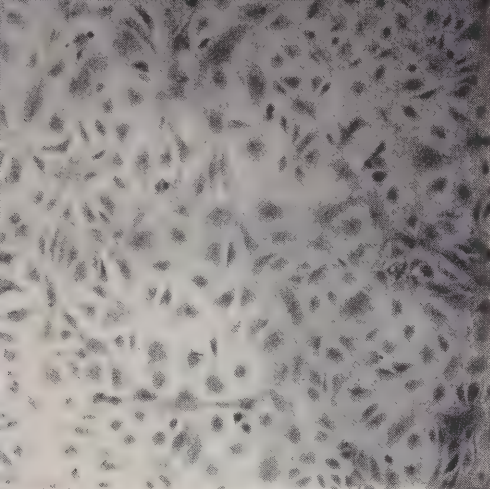


FIGURE 1.

Trypsinized monkey kidney cells. (X70). Stained with 0.2 cc. of crystal violet, on 6th day of growth.

would be observed every two days. Although He La cell cultures were considered preferable because of their human origin, economic factors acted as deterrent.

A HOST SYSTEM

Step 1. Both kidneys of a freshly killed 5-7 pounds rhesus monkey were removed.

Step 2. Under aseptic conditions they were sliced with a Bard-Parker no. 15 knife, as finely as possible. The tissue was further shredded and all macroscopic connective tissue which are like rubbery strands, removed.

Step 3. The tissue is then thrice washed with Hanks' balanced salt solution, and finally with Difco Trypsin 1: 250 and these supernates decanted and discarded.

Step 4. All the remaining cells and cell clumps, were placed in a modified Erlenmeyer flask with an electromagnetic stirrer, and 0.25% trypsin added. These supernates were decanted every 5 or 6 minutes and pooled in a sterile Roux bottle. The trypsin (a pancreatic enzyme) dispersed all the monkey kidney cells.

Step 5. These cells were centrifuged and placed in synthetic medium solution 199, ⁽⁷⁾, at 37°C.

Step 6. 1 ml. of the re-suspended cells were removed, and 1 ml. of crystal violet added to stain the nuclei with attached cytoplasm. A hemocytometer count was made, so that on dilution each ml. of sus-

pension would contain 200,000 cells/ml.

Step 7. Each 16 X 150 mm. pyrex test tube is thus tallied to contain 2cc. of growth solution consisting of 2% filtered horse serum and 98% synthetic medium 199, in which are 400,000 cells.

Step 8. The test tubes were tightly closed with rubber stoppers and the cells left to settle on the glass surface and grow into a continuous monolayer sheet of cells. An example of the fine luxuriant outgrowths are seen in Figure 1.

B. HYPOTHETICAL VIRUS SYSTEM

In the ten patients, from whom pathogenic material was derived, there were five males and five females. Their ages ranged from 21 to 50.

Two of the 10 specimens were obtained from University patients, following two negative root canal cultures on glucose ascites media (i.e., a bacteriologic macroscopic test).

The remaining eight were private patients, of whom two were in acute pain, and the remainder in various stages of chronic infective granulation, as noted by X-ray diagnosis.

Employing solution 199, (with 1,000 units penicillin plus 200 ug streptomycin (ml), to inactive bacteria, two infected paper root canal points were placed into the test tubes containing 2cc. of this synthetic medium as a vehicle.

The test tubes were stored in the frigidaire at 4°C. until ready for inoculation into the host system.

PROCEDURE AND OBSERVATIONS

Each experiment involved a minimum of 7 roller tubes. Four of these were inoculated with 0.1, 0.2, 0.4 and 0.8 cc. of original similar pathological material respectively from each case. The remaining 3 tubes were retained as controls.

As per original instructions, the tubes were examined under low power (X 70) every second day to note any cytopathogenic changes. Gleaning various research papers such as: "A Cytopathogenic Agent Isolated From Naval Recruits with Mild

Respiratory Illnesses" ⁽⁸⁾, which indicated relatively mild, chronic cytopathogenicity to acute cellular destruction, by the 3 types of poliovirus, an image was created of possible results.

Cultures were examined for a minimum of 30 days, following which they were discarded, if no cytopathogenicity, however small, was observed.

METHODS

Four of the 10 cases, revealed certain, slight degeneration as compared with controls.

These four were subcultured and an additional 4 continuous passages were completed, at intervals of two weeks.

The third and fourth passages were performed in Leighton tubes. These had one flattened side large enough to receive 8X30 mm. "flying coverslips" on which the cells settled and commenced to multiply.

The latter tubes were held stationary, as they were too wide to be fitted into the roller drum.

Hematoxylin and eosin staining of the coverslips by the pathology department were done, in an effort to reveal if any nuclear or cytoplasmic inclusion bodies had formed. This method permitted high magnification under oil immersion, which is unattainable employing only ordinary roller tubes.

VIRAL DETECTION METHODS

(1). PH differential test. Each tube contained 0.002% phenol red. This indicator is red at PH 7.4 to 7.8.

It becomes salmon and finally yellow after the PH drops below 7.0.

"Conversely, cell necrosis induced by the virus, leaves the medium red, for the dying cultures fail to reach the degree of acidity exhibited by the control cultures." (9).

(2) Inhibition of cell migration.

(3) Cytopathogenic effects. Enlarging and rounding of epithelial cells, with fine cytoplasmic granularity and indistinct nuclei; to complete destruction of

the cells in the shortest possible time.

It must be understood however, that many known viruses do not bring about the death of cells in culture. e.g.—Feller, Enders and Weller (1940), found that the virus of vaccinia, herpes simplex, and influenza exert little or no injurious effect on embryonic chick cells growing in roller tubes. ⁽¹¹⁾.

CONTINUOUS SERIAL PASSAGE

It is known that repeated transfer in vitro may bring about alterations in the virulence or pathogenicity of bacteria. So, too, serial passage of viruses in tissue culture has frequently led to changes in their capacity to induce disease.

The best known example is Max Theiler's isolation of the 17 D variant virus of yellow fever, now employed successfully in vaccines throughout the world to foil this dread disease.

Thus, an attempt was made to adapt some signs of cytopathogenicity in four cases, so that on serial passage, the possibility avirulent agent present, destroy the monkey kidney cells with increasing rapidity by the process of adaptation. The peripheral epithelial cells — seemed to round out and enlarge, the nuclei becoming indistinct. As compared to controls, the result was neither striking nor positive, as the main internal mass of kidney cells were not parasitized.

To explain this result, it was suggested that a minute amount of virulent toxin from the gangrenous pulps (unneutralized by penicillin and streptomycin) was responsible for this phenomenon. ⁽¹⁰⁾.

In the latter series of monkey kidney cell cultures employed, a modification of the continuous flow trypsinization procedure, (herein outlined by successive steps) was utilized. Instead of 36°C. trypsinization was done at 4°C., overnight, for once this process was begun, no further supervision was necessary, until the tissue was exhausted. Even finer outgrowths than heretofore, were obtained by this modification.

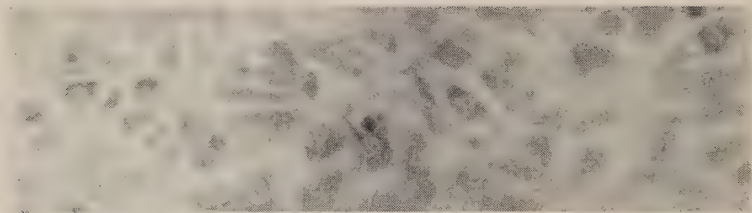


FIGURE 2.

4th subculture (X 100) of case exhibiting slight cytopathogenicity compared with controls after 22 days. Note: rounding and enlarging of cells, cytoplasmic granularity, and indistinct nuclei. (cf. Fig. 1.).

DISCUSSION

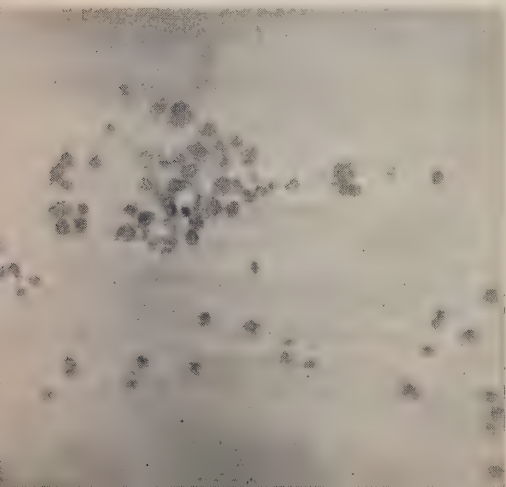
Many viruses have a restricted host range, let alone cellular tropism. "Some of those producing disease in man, varicella and Zoster for example, are capable of multiplying in human tissues only, and our knowledge of them has advanced but slowly." (11).

Because dental caries and periodontal disease are naturally restricted to homo sapiens, it would seem logical to presuppose that human cell cultures would be superior, for experimental purposes in virus isolation from infections material.

J. F. Enders (12) Nobel prize recipient writes: "If feasible, it is best in attempting to cultivate a virus for the first time to use tissues from the natural host."

FIGURE 3.

Same culture as in Fig. 2, but seeded with 0.1 cc. Type 1 poliovirus on the 18th day. Equivalent to 10^9 viral particles. Note: total degeneration, and agglutination into cell clumps.



It is thus encouraging that Dr. V. Pavlanis has granted permission for several further tests to proceed, employing Gey's He La cell cultures (epithelial-like cells derived from the cancerous cervix of a female), in a further attempt to isolate a non-bacterial parasite from dental tissues.

At the Rockefeller Hospital, Manhattan, 200 biopsies of diseased tonsils and adenoids were obtained, and subcultured on human embryonic amnion cell cultures. Although the adenovirus was a known entity, and had been shown further to possess 14 distinct immunologic types, all but 20 of the 200 cases tested were positive, a meagre 10%. (13).

It would thus seem, by analogy, that a larger number of tests (dealing in this paper with a nebulous entity, quite possibly non-existent), would be in order.

Employing various host cellular systems, new light might indirectly be brought to bear on the problems which plague dentistry, namely the initiation of caries by the breakdown and parasitization of the primary enamel cells, followed by an odontoblastic invasion.

Ideas may run amok, and controlled scientific data must be accumulated to prove or disprove these contentions.

For those who may seek to enlarge upon this work, may we offer several suggestions, based upon this experience.

(1). Employ infected material only from acute and sub-acute cases.

Chronic conditions, minus pain, over a

time span of one month to several years, indicate that body defenses have temporarily neutralized the infective material, either by walling it off, or consistently sending polymorphs and mononuclears to remove toxic by-products.

All six X-rays shown below, possess chronic granulomatous areas, from which pathogenic material was obtained. Some radiolucent areas, may have been there for many years.

(2). Obtain at least some vital tissue. If the dental pulp and periapical specimen is completely putrescent, there is no purpose served by inoculating this material.

Viruses have reached the summit of parasitism; and lead "a borrowed life".

Once cells degenerate, they somehow disappear, for they are obligatory intracellular parasites.

Focal infection (as seen in the X-rays), unfortunately implies metastasis.

"Toxic material disseminated from a focus may sensitize remote tissues so that subsequent exposure to the toxin will cause the allergic tissue to react." ⁽¹⁴⁾.

Just as the tonsils are compressed during swallowing, and force the adenoviruses into the entire body: even more so teeth, which are daily subjected to pressures of 150-200 lbs. by the muscles of mastication.

Thus, a drop of blood, or some healthy cells from the surrounding focal area,

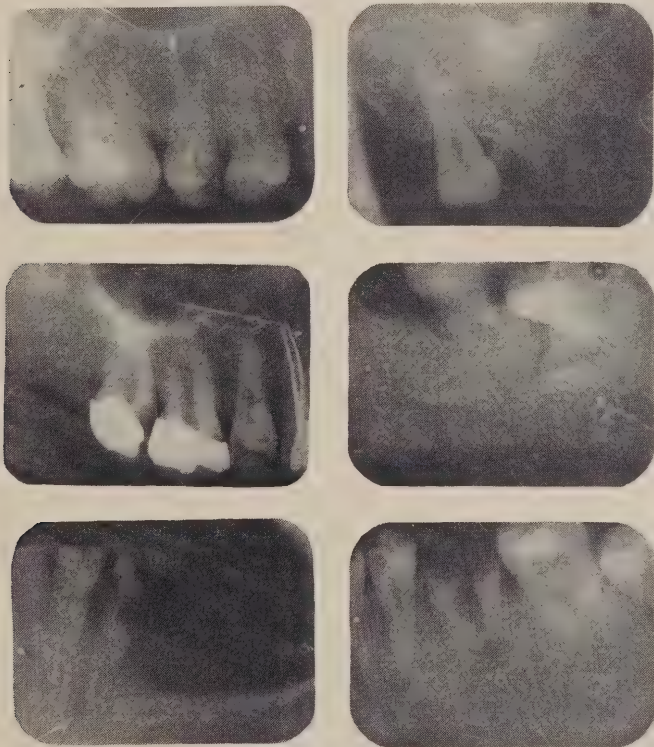


FIGURE 4

Chronic radiolucent areas (arrows). Six of the ten tests were derived from the above group.

should be incorporated in the specimen to be tested.

Several experimental results point to a direct relationship between the multiplication degree of viruses and the biologic activity of tissue. Odontoblasts, pulp tissue, and osteoblasts are of lesser biologic metabolism, which suggests mediocre viral formation.

(3). In these experiments, inoculation was often not immediate, the material being stored in the refrigerator at 4°C., for periods up to four days prior to seeding (i.e. samples from private patients).

Storage in a deep freeze, at -20°C., is far more propitious, the virus inactivation curve being sharply decreased, if this method be employed as standard. The infectivity of a virus is believed by W. M. Stanley⁽¹⁵⁾, to rest in the nucleic acid segment; denaturation can then be minimized through immediate deep-freezing.

CONCLUSION

The research herein undertaken was basically an idea not a project. Future dental research would do well to take advantage of the myriad possibilities the relatively new field of cell culture offers in the solution of its unsolved problems.

SUMMARY

No cytopathogenic virus was uncovered from ten cases of infected dental root

canals and periapical granulomas, employing monkey kidney cell cultures as a host medium.

ACKNOWLEDGMENT

Many thanks to Mrs. Podoski for her theoretical and practical suggestions. Also to Miss Tremblay, Dr. F. Somlo for staining and studying of the flying cover-slips, in seeking inclusion bodies.

BIBLIOGRAPHY

1. Berg, R. H.: Polio and Its Problems. 1948. P. 90, J. B. Lipincott Co.
2. Daldorf, G.: Introduction to Virology. P. 64, 1955.
3. Neutralization of teratogenic and lethal effects of Influenza — A virus in chick embryos: Proc. Soc. Exp. Biol. & Med. P. 523, Aug. 1955.
4. Teratogenic effects of herpes simplex, vaccinia, Influenza-A. (NWS) and Distemper virus infections on early chick embryos: Proc. Soc. Exp. Biol. and Med. 1956, P. 675.
5. Dorland, W. A. M.: Teratogenesis P. 1471, W. B. Saunders Company.
6. Blank, H. & Rake Co.: Viral and Rickettsial Diseases of the Skin, Eye, and mucous membranes of man. (1955), P. 71.
7. Morgan, J. F., Morton, Helen J. and Parker, R. C.: Proc. Soc. Exp. Biol. & Med. Jan. 1950, V. 73, 1.
8. Felon, W., Mogabab, W. J., Phillips, J. A., & Pearce, W. E. Feb. 1957, P. 262.: Proc. Soc. Exp. Biol. & Med.
9. Melnick, J. L.: Diagnostic Procedures For Virus and Rickettsial Diseases, P. 97, 1956.
10. Pavlanis, V., Personal discussion.
11. Bedson, S. P., Downie, A. W., MacCallum, F. O. and Stuart-Harris, C. H.: Virus & Rickettsial Diseases, P. 26, (1955).
12. Enders, J. F., Propagation of Viruses and Rickettsial in Tissue Culture 1952). P. 136. (Editor: Rivers, T. M.,)
13. Osterhout, Dr. Rockefeller Institute For Medical Research. Personal discussion.
14. Coolidge, E. D., & Kessel, R. G. (1956). A Textbook of Endodontology. P. 340.
15. Stanley, W. M., Newsweek Magazine. Jan. 7, 1957.

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Partial dentures cannot be successfully rebased by a routine standardized technique. Critical clinical factors determine the procedure followed. These factors are: (1) the type of denture bases present on the partial denture, (2) the degree of ridge resorption under the denture base, (3) the accuracy of the border extension of the denture bases, (4) the occlusion of the artificial teeth on the denture bases, and (5) the presense of framework rotation.

A consideration of these factors dictates the classification of partial dentures requiring rebasing into seven definite groups requiring supplements to a general basic technique. The supplements that are added to the basic technique according to changes observed are: (1) the border supplement, (2) the spacing supplement, (3) the framework supplement, and (4) the occlusion supplement.

Louis Batterstein, *Journal Prosthetic Dentistry*, June 1958

RADIATION HAZARDS RESULTING FROM THE USE OF DENTAL X-RAY MACHINES

A Statement prepared by
THE RESEARCH COMMITTEE
CANADIAN DENTAL ASSOCIATION
April 1958

The value of the X-ray as a diagnostic aid in dental practice cannot be questioned. However, because of the increasing use of the X-ray, and because of the increased exposure of the public to radiation from other sources, the dental profession owes it to the public and to itself to review its practices in connection with the employment of the X-ray and to make an effort to reduce the hazards in this connection where feasible.

Radiation hazards resulting from the use of the dental X-ray should be considered as they relate to both the operator and to the patient, and these dangers in each instance may take three possible forms. First, the skin surface may be exposed to sufficient radiation to cause a burn or erythema. Second, deeper tissues, particularly bone marrow and lymphatic tissue may be affected adversely by the radiation, resulting in a leukemia or other blood cell disease. Third, radiation to the gonads may produce mutations within the developing germ cells, resulting in harm to succeeding generations.

Danger to the operator emanates both from direct exposure to the X-ray beam, and from scattered radiation from the patient's face and nose cone on the machine. Provided reasonable care is exercised (i.e. avoiding standing in direct beam when the machine is on) the danger to the operator appears minimal. Exposure to scattered radiation can be markedly reduced by increasing the distance between the operator and the patient while taking X-ray pictures. That is, the timer cord should be as long as possible.

In regard to the patient, it appears that during normal routine use of the dental X-ray the danger of producing an erythema to the facial skin is very slight and that radiation reaching the gonads does not seem to be a very serious hazard either, since it is only 1-3% of that from natural background. However, it should be noted that there is no threshold dose for producing mutations in the developing germ cells. On the other hand, the marrow exposure from dental X-ray is high, and this appears to be the most serious factor

limiting the use of the machine. Since the exposure threshold for causing alterations to developing blood-forming cells of bone marrow or lymphatic tissue is unknown, it must, at this time, be assumed that *any* dose in addition to normal background radiation is potentially dangerous, and every effort should be made to reduce these exposures to an absolute minimum.

The hazards to the patient can be greatly reduced by simple modifications to either the machines or the techniques which are generally in use, as follows:

1. Pure sheet aluminum should be placed between the X-ray beam source and the patient. The added aluminum should be sufficient to make the total filtration equivalent to about 2 mm. of aluminum. (The amount added varies with each type of machine, each having some inherent filtration which can be ascertained from the manufacturer. Adequate added filtration will, on the average, reduce the skin (and marrow) dose by about 50%.
2. A lead diaphragm should be placed between the beam source and the patient to ensure that the area of the skin surface radiated at each exposure is not more than 2¼ inches in diameter. Depending on the area of skin exposed by the machine without a diaphragm (this varies from about 4½ inches to 3½ inches) the skin or marrow dose can be reduced by an additional 38 to 68% by this means.
3. A technique should be employed which will make use of the fastest film now procurable. Depending on the film presently employed, this can reduce the patient exposure by another 66% or more.

If each of these safety measures is adopted the amount of exposure of patients to radiation from the dental X-ray machine can be reduced by as much as 95% without reducing the diagnostic value of the films.

In addition to this, if one of the newer dental X-ray units operating at 90 kilovolts (rather than 65 K.V.) is employed, an additional reduction of about 28% in facial radiation dose can be achieved.

ABSTRACTS

Doctor Means Teacher

JOHN BURTON, B.A., M.R.C.S., D.P.H.

Health services, whether curative or preventive, are in most countries mainly geared to give assistance to persons who are dependent rather than co-operative with people in building up the necessary knowledge and independence of choice which will enable them to make their own health decisions more effectively. Whether we like it or not, in the vast majority of cases it is the patient himself or his friends and relations who make the first diagnosis. It is the patient and his relations who decide whether he will visit a medical practitioner or a 'quack' and, also, whether he goes early or late. It is the patient, his relatives and employers who decide whether the treatment or preventive measures fit in with his other aims and obligations in life.

Medical opinion appears to support the general thesis that doctors and nurses should be concerned with health education, and that there is a place for the specialist health educator.

The practice of health education will, like the rest of medicine, remain as much an art as a science, dependent on subjective as well as objective assessments.

How much does the level of knowledge and the attitude of the individual at risk affect the prevention or treatment of asth-

ma, heart disease, dental caries, bronchitis, gastritis, diarrhoea and enteritis, rheumatism, accidents, neuroses, influenza, common cold, cancer, tuberculosis? The same question may be applied to the major causes of sickness absence in industry: falls, burns, contusions, colds, foot troubles, sepsis, neuroses, fractures, dermatitis, gastro enteritis, cuts, eye injuries, bronchitis, rheumatism.

As an integral part of health services health education is still young, and much has yet to be learnt by trial and error. The highest professional standards must be set if work in this field is to be effective and attractive to the people it aims to help. These standards are more necessary in health education than in any other branch of health work because false notions, foolish behaviour and bad impressions do not die with the patient, but may persist to the third and fourth generation.

At present there is a fund of goodwill towards health education and much lip service is paid to it, but the financial provision for training and research is still homoeopathic. As in other branches of medicine and public health, progress depends on the resources which the community is prepared to make available. In health education the most important of re-

sources is people, but in nursing and in medicine there are many counter attractions for those of the quality, integrity and imagination required. The selection

and training of the right people must therefore be looked on as a serious and profitable investment in the future.

International Journal of Health Education
Vol 1, No. 1, January 1958

Incidence of Clinical Manifestation of Periodontal Disease in Light of Oral Hygiene and Calculus Formation

ARNE LOVDAL, D.D.S. et al.

A random sample of the Norwegian population composed of 1,202 male employees of a modern manufacturing company were examined to determine the number of teeth present; the efficiency of oral hygiene; the incidence and distribution of subgingival calculus, gingivitis and pathologic pockets, and the incidence of tooth mobility. The men ranged from 20 to 70 years and were divided into two groups, workers and staff.

The following conclusions can be drawn from the data:

The over-all dental conditions were conspicuously better among the staff members than among the workers.

Loss of teeth was found to take place more or less continuously during life, but the incidence was higher among the workers than among the staff members.

The efficiency of oral hygiene was poor throughout the series. It was best in the youngest age group and decreased with age; it was poorer among the workers than among the staff members. Usually, only buccal surfaces were kept clean.

Deposition of subgingival calculus was common in the youngest age group and increased with age. It is observed most often on the interproximal surfaces, next in frequency on the lingual surfaces and least often on the buccal surfaces.

The distribution pattern of gingivitis was similar to that of subgingival calculus.

Pathologically deepened pockets were found to occur rarely before the age of 25 years. The incidence increased with age, but it seemed to reach a peak in the 45-55 year age group or even earlier. During this age span, loss of teeth apparently causes a reduction of the pocket depths of the remaining teeth. Pathologically deepened pockets are located most frequently on the interproximal surfaces and least often on the buccal surfaces.

A correlation exists between the efficiency of oral hygiene and the incidence and distribution of subgingival calculus, gingivitis and pathologically deepened pockets.

Increased tooth mobility does not become an important problem until the age of 35 years, but, from then on, it increases steadily with age.

The fact that the main clinical manifestations of periodontal disease, gingivitis and pathologic pockets, are observed most frequently on the interproximal and lingual surfaces implies that efforts at the prevention and treatment of periodontal disease should be directed toward these surfaces.

Journal of the American Dental Association
Vol. 56, No. 1, January 1958.

Radiation as a Public Health Problem

DAVID E. PRICE, M.D.

Radiation presents three major challenges to the public health profession. First, the public must be alerted to the health programs which can provide security from fears that would hamper the constructive development of atomic industry and atomic medicine. Public understanding is basic because adequate radiological health programs require both legal authority and financial support on a scale possible only when there is general public acceptance.

The second big problem is of trained manpower. Radiological health is a specialized field with concepts, vocabulary, units of measurement, and sensitive instrumentation of its own. With the increase of radiation sources, there must be a corresponding growth in health personnel who have the training required to provide planning, surveillance, and other services. However, since highly trained specialists are produced slowly and since there is much to be done right now, the Public Health Service is providing practical training to the existing staffs of State and local health departments. This is done by courses and seminars designed to instruct trainers, persons who can conduct similar programs in

their own areas. In addition, the corps of specialists needed as teachers and researchers must be increased. For this task, we look to our colleges and universities.

The third major need is research. We must know the probable doses and the biological effects. The engineering field is presented with equally momentous challenges. For example, we have yet to find a satisfactory and economical method of disposing of high-level radioactive waste. The Atomic Energy Commission already has more than 65 million gallons of radioactive waste buried in tanks in the earth. As the nation becomes dotted with nuclear energy plants, what is to be done with these high-level wastes? We are getting by at present with temporary expedients; we must seek long range solutions.

From a public health standpoint, radiation is still a preventable health hazard. Since we recognize that all radiation is harmful and that its effects are cumulative and irreversible, the price of delay in the vigorous pursuit of research and control efforts might well prove to be intolerably high.

Public Health Reports
U. S. Dept. of Health, Education and Welfare.
Vol. 73, No. 3, March 1958

The effectiveness of a single topical application of a 10 per cent stannous fluoride solution was evaluated for its ability to reduce the dental caries experience in adults. One year following the topical treatment with stannous fluoride, there were 24 per cent less dental caries when evaluated by the DMFT index and 16 per cent less when the DMFS index was used when compared to a similar group receiving a single topical application of distilled water. These reductions were significant at the 0.04 and 0.08 level of confidence, respectively.

Joseph C. Muhler, *Journal Dental Research*, June, 1958.

EDITORIAL

Does Bill 320 Affect Dentistry?

On April 12th, 1957, Bill 320 of the Parliament of Canada received Royal Assent. The Act is known as the Hospital Insurance and Diagnostic Services Act and it represents the initiation of the third phase of a five phase health insurance program for Canada. Unquestionably then, Bill 320 affects dentistry.

As early as 1919 one major Canadian political party advocated the introduction of health insurance. During the 1930's there was considerable discussion in respect to the possible introduction of health insurance which culminated in a health insurance bill at Ottawa in 1944. The decision fourteen years ago was to delay the adoption of the measure not discard it, as it seemed politically desirable to introduce other social security benefits before proceeding further with health insurance.

In 1948 a five phase plan was evolved and the Prime Minister of the day introduced the first part of the development when he made Federal Health Grants available. It was frankly admitted that these grants were made in preparation for health insurance. Some of the grants were specifically directed to provide facilities while others were for the training of personnel and a survey of the Canadian health needs.

Additional grants were made available in the second phase of this development in 1953, for diagnostic services. This was the first action relating specifically to

treatment services and considerable discussion still continues in respect to this phase.

Bill 320 represents the third progression and the implementation of this Hospital Health Insurance is now taking place in most of the provinces. The fourth phase, medical services, and the fifth, dental services, remain to complete the health insurance movement. It is interesting to note that the third phase was initiated within ten years from the presentation of the master plan. Perhaps we can wonder what the next ten years have in store?

Section 2, sub-section g of the Act seems most pertinent to the dental profession: "insured services" means the in-patient services and out-patient services to which residents of a province are entitled under provincial law without charge except a general charge by way of premium or other amount not related to a specific service . . .". Obviously then, the inclusion of dental services is a responsibility on the provincial level.

But how can dental service be included if there is no legal right to provide such a service in the public general hospitals of the provinces?

There are efforts being expended by one or two provinces in an attempt to clarify the legislation on the point in question. We wonder why more is not being done in other areas to assure dentistry's right-

ful place as an essential health service in our hospitals.

It has long been our view that one is beginning to understand something about a subject when he can ask intelligent questions. It is even more reassuring when one can answer them. Are our various provincial enactments respecting hospitals sufficiently well understood in order to know with a certainty, that dental services are or are not provided for? We think not. Are there provisions in the Act itself? If not, what about the General Regulations developed pursuant to the Act? Do these regulations provide permis-

sive legislation to enable our profession to render its services in the hospitals? Perhaps there is a model set of by-laws for hospitals which may or may not include some provision? The local hospital itself may have a by-law authorizing dental service. But is such a by-law in conformity or in conflict with superior legislation? Or is dentistry's participation in the local hospital contingent upon some tenuous arrangement or compatible personality?

Unless the provincial dental organizations can unequivocally provide favourable answers for these questions Bill 320 may even more greatly affect them.

Congratulations to the R.C.D.C.

A Friday the thirteenth is not generally regarded as a day when Lady Luck or Dame Fortune smile with favour. To the Royal Canadian Dental Corps, however, Friday June 13th was a day of historic significance. In the presence of senior officers representing the three Armed Services, and a host of serving and retired officers and guests, the Honourable George R. Pearkes, V.C., Minister of National Defence, officially opened the R.C.D.C. School at Camp Borden, Ontario.

General Pearkes, in his address paid deserving tribute to the Royal Canadian Dental Corps for the role it has played in

providing an essential health service to Canada's Navy, Army and Air Force.

The school, with its modern and utilitarian facilities, will provide refresher courses for dental officers as well as conduct technician training programs. The dental company which is responsible for the provision of treatment to the personnel of the Camp is also located in the same building.

The culmination of years of hoping and planning is to be found in this school. To the Director-General of Dental Services, to the Commandant of the School, and to the Officers of the Corps we extend our heartiest congratulations.

THE CANADIAN DENTAL ASSOCIATION ANNUAL CONVENTION

Queen Elizabeth Hotel

Montreal, Quebec

October 26 - 29, 1958

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

ADDITIONS

AMERICAN COLLEGE OF DENTISTS: Suggestions for a program of continuing educational efforts and professional advancement. Discussion presented before the A.C.D. at Miami Beach, Florida, November 3, 1957. St. Louis, Mo., 1957. 167 p. Mimeo.

AMERICAN COLLEGE OF RADIOLOGY: A practical manual on the medical and dental use of x-rays with control of radiation hazards. Chicago, 1958. 31 p. \$0.25. (Sponsored by American Dental Association.)

BERRY, M. F., and EISENSEN, J.: Speech disorders: principles and practices of therapy. New York, Appleton-Century-Crofts, Inc. 1956. 573 p. illus. \$6.75.

BRINKOUS, K. M. Ed.: Hemophilia and hemophiloid diseases; international symposium Chapel Hill, The University of North Carolina Press. 1957. 265 p. illus. \$10.00.

COMMITTEE TO PROTECT OUR CHILDREN'S TEETH, INC.: Gains and setbacks; community experiences on efforts for acceptance of water fluoridation. New York, 1957. Collection of 29 reports.

CULLEN, S. C.: Anaesthesia: a manual for students and physicians. Chicago, Year Book Pubs., 5th ed. 1957. 295 p. illus. \$5.50.

DENTON, G. B.: The vocabulary of dentistry and oral science; a manual for the study of dental nomenclature. Chicago, American Dental Association, 1958. 207 p. \$4.00.

GENERAL DENTAL COUNCIL, LONDON, ENG.: Regulation of dental practice; a survey of the legal and educational requirements for the practice of dentistry and dental surgery in different parts of the world. 1957. 144 p. 10s.

MARTIN, H.: Surgery of head and neck tumors. New York, Hoeber-Harper, 1957. 430 p. illus. \$18.50.

MOORREES, C.F.A.: The Aleut dentition; a correlative study of dental characteristics in an Eskimoid people. Cambridge, Mass., Harvard University Press. 1957. 196 p. illus. \$5.95.

NEW ZEALAND, COMMISSION OF INQUIRY ON THE FLUORIDATION OF PUBLIC WATER SUPPLIES: Report. Wellington, Govt. Print., 1957. 240 p.

OTSBY, N. N.: A manual in endodontics. Oslo, Norwegian Institute of Dental Research, (n.d.) 56 p. Mimeo.

ROBINSON, J. T.: The dentition of the Australopithecine. Memoir No. 9, published by the Transvaal Museum, Pretoria. 1956. 179 p. illus. 2£3s.

SCOTT, J. H., and SYMONS, N.B.B.: Introduction to dental anatomy. 2nd ed. Edinburgh, Livingstone, 1958. 344 p. illus. \$7.15.

SHILLINGTON, COL. G. B.: Handbook of the fundamentals of partial denture planning. Ottawa, Queen's Printer, 1957. 70 p. illus. \$1.00.

STANFORD, G. H.: The conduct of meetings. Toronto, Oxford University Press. 1958. 88 p. \$2.50.

BOOK REVIEW

Clinical Procedures in Occlusal Rehabilitation.

Prepared by: S. Charles Brecker, D.D.S., F.A.C.D. Published by: W. B. Saunders Co. Pages: 326—428 Illustrations. Price: \$16.00.

The significant contribution this textbook makes to dentistry is the presentation of case histories, well done and well illustrated from diagnosis to execution employing the author's classification of occlusal rehabilitation.

This portion of the textbook would be a valuable reference for all dentists interested in restorative dentistry whether they propose complete occlusal rehabilitation or partial oral rehabilitation. In this section the author has shown to good advantage the utilization of the new porcelain fused to metals and his advocacy of "periodontal electronic surgery".

The chapter on full coverage restorations dealing with cavity or crown preparations, care of the soft tissues, coolants and the use of porcelain etc., is lucid and well illustrated.

The illustrations and photographs throughout are well done.

The discussion on fixed and removable partial dentures employing precision internal attachments is clear and concise, as is the chapter dealing with impression techniques, silver plating, and transfer copings.

The author's discussion of such important phases of this work as, the value of articulators, face bow transfer, the hinge axis, the temporomandibular joint and its influence on occlusion, centric and balanced occlusion is all too brief and controversial to be of much value to the beginner in this profound type of dentistry.

The reader would require to search elsewhere for a sound background in the all important task of learning occlusal correction of the natural dentition or the fabrication and wax-up of a functional occlusion for the professed desire to perform an occlusal rehabilitation.

William R. Scott

THE ASSOCIATION

ANNUAL MEETING — MONTREAL, 1958

Board of Governors — October 22 - 25
Convention — October 26 - 29

New Members on Board of Governors

Doctors J. M. Chamard of Montreal and R. M. Leblanc of Sherbrooke have been elected to the Board of Governors as representatives for Quebec. The province of Quebec now has 1,355 dentists and is consequently entitled to three representatives on the Board. Dr. R. Langlois of Quebec remains as the other representative.

Dr. L. M. Grose of Toronto has been elected as representative for Ontario, to replace Dr. C. L. Strachan who has found it necessary to resign, for personal reasons. Dr. Grose is a past president of both the Ontario Dental Association and the Toronto Academy of Dentistry.

New Staff Appointment at Dalhousie

Dr. Alexander Eli Hoffman has been appointed to the full-time staff of the Faculty of Dentistry at Dalhousie University as Associate Professor of Oral Surgery.

Dr. Hoffman's post-graduate studies, since graduation from Dalhousie in 1953, have been supported by Canadian Dental Association studentship awards and assistance from the Kellogg Foundation.

Following graduation from Dalhousie with a distinguished record, Dr. Hoffman studied for one year at Tufts University in Boston and has continued his studies since then at the Henry Ford Hospital in Detroit. Dr. Hoffman is a native of Saint John, New Brunswick.

Ontario to Have Liability Plan

Agreement in principle has been given to a group liability program of insurance which will be activated on August 1st. Sponsored by the Royal College of Dental Surgeons of Ontario, the plan will include professional liability and premises liability.

Coverage offered is greater than presently available privately at comparable premiums. Two significant advantages of the group plan are the impossibility of cancellation to an individual by the company and the lack of an age limit. The policy will include not only the dentist but all his employees while working for him in the office.

"Dentistry as a Professional Career"

In response to considerable demand, the Council on Dental Education of the Canadian Dental Association has just published a new booklet entitled "Den-

tistry as a Professional Career".

The booklet is intended for reading by senior secondary school students who have shown a interest in securing detailed information about a career in Dentistry.

By employing C.D.A. printing facilities, publication costs have been kept as low as possible. In keeping with Association policy of providing such publications at cost, quantities are available at ten cents per copy.

First Alberta Town Fluoridates Water

Fairview has become the first town in Alberta to begin fluoridation of its water supply. The Provincial Sanitary Engineer recently inspected the town's equipment and gave his final approval to the system. Other municipalities in the province have approved fluoridation by plebescite and are expected to install the necessary equipment soon.

CANADIAN DENTAL ASSOCIATION RETIREMENT SAVINGS PLAN

GOVERNMENT BOND FUND

Cash:		\$ 115.58
Investments:		
201 Units *C.I.F.—Gov. Bond Fund at \$99.092 per unit		19,917.49
Interest Accrued to 31st May, 1958:		
201 Units *C.I.F.—Gov. Bond Fund at \$.40121 per unit	\$ 80.64	
The Royal Trust Company interest on cash balances	0.27	80.91
TOTAL		\$20,113.98
Less: Administration fees— $\frac{1}{8}$ of 1% of \$20,113.98		25.14
TOTAL MARKET VALUATION		<u>\$20,088.84</u>
TOTAL UNITS OUTSTANDING—1,969.830 Units		
Unit Value as of 31st May, 1958—\$20,088.84		<u>\$10,198.00</u>
	1,969.830	

* The Royal Trust Company Classified Investment Funds for Pension Trusts—Statement to follow.

CORPORATE BOND FUND

Cash:		\$ 285.12
Investments:		
402 Units *C.I.F.—Corp. Bond Fund at \$101.013 per unit		40,607.23
Interest Accrued to 31st May, 1958:		
402 Units *C.I.F.—Corp. Bond Fund at \$.47189 per unit	\$189.70	
The Royal Trust Company interest on cash balances	0.60	190.30
TOTAL		<u>\$41,082.65</u>
Less: Administration fees— $\frac{1}{8}$ of 1% of \$41,082.65		51.35
TOTAL MARKET VALUATION		<u><u>\$41,031.30</u></u>

TOTAL UNITS OUTSTANDING—4,038.28 units

Unit Value as of 31st May, 1958— \$41,031.30

4,038.28

\$10,160.00

* The Royal Trust Company Classified Investment
Funds for Pension Trusts—Statement to follow.

COMMON STOCK FUND

Cash:		\$ 220.55
Investments:		
802 Units *C.I.F.—Common Stock Fund at \$81.593 per unit		65,437.59
Interest Accrued to 31st May, 1958:		
802 Units *C.I.F.—Common Stock Fund at .21982 per unit		176.30
The Royal Trust Company interest on cash balances	.53	176.83
TOTAL		<u>\$65,834.97</u>
Less: Administration fees— $\frac{1}{8}$ of 1% of \$65,834.97		82.29
TOTAL MARKET VALUATION		<u><u>\$65,752.68</u></u>
TOTAL UNITS OUTSTANDING —6,138.29		
Unit Values as of 31st May, 1958—\$65,752.68		
6,138.29		<u><u>\$10,712.00</u></u>

* The Royal Trust Company Classified Investment
Funds for Pension Trusts—Statement to follow.

TRUSTEE: THE ROYAL TRUST COMPANY
PER: H. E. TRENHOLME, MANAGER
PENSION TRUST DEPARTMENT

At the inception of the Plan, the value of each unit was \$10.00. The increase in unit values, as shown above, reflects dividends and interest earned plus changes in values of the investments. Money entering the Plan during the present quarter will purchase units at the new unit values of each of the Funds within the Plan.

Quarterly valuation dates are March 1st, June 1st, September 1st and December 1st each year. It is our intention to publish quarterly statements from the trustee of the Plan in July, October, January and April issues of the Journal.

THE PROVINCES

ALBERTA

Edmonton and District Dental Society

Officers were elected by the Edmonton and District Dental Society at a meeting held in May. Dr. W. Ross Stuart was installed as president.

Members of the executive are: Dr. R. D. Haryett, president-elect; Dr. G. T. Lindskoog, secretary; Dr. W. I. M. Steen, social convener, and Dr. S. G. Geldart, Dr. R. L. Costigan, Dr. L. A. Hague, directors.

Committee chairmen are: Dr. C. W. Olsen, curling; Dr. C. Duke, Chamber of Commerce representative; Dr. D. M. McIntyre, Board of Health representative; Dr. H. Scott, hospital committee; Dr. P. Kendall and Dr. J. Young, sick committee, and Dr. A. A. Olsen, press representative.

Two new members were admitted to the dental society. They are Dr. Allan Jevne of Westaskiwin, and Dr. Gordon Deane of Edmonton.

A presentation was made to Dr. W. S. Hamilton, retiring Dean of the Faculty of Dentistry of the University of Alberta.

BRITISH COLUMBIA

B.C. Dental Association—Annual Convention

Glorious sunshine prevailed and the city was in Centennial garb for the annual convention of the B.C. Dental Association held at the Hotel Vancouver on the first three days of May.

Dr. L. W. Beamish, the president, extended a welcome to the 390 registrants and guests who came from the coastal centres, the farther parts of the province, from Alberta and the neighboring states.

Alderman Frank Baker brought greetings from the City Hall and he was an especial *persona grata* because of his efforts on the Council to promote fluoridation. (A colleague who has publicly opposed the measure had the grace to decline.) Mr. Baker advised keeping the fluoridation pot boiling as the opponents certainly do.

Introduced by Dr. Kyle Berry, program chairman, Dr. Eugene W. Skinner of Northwestern University, a featured essayist, outlined research done in the field of materials

used in the taking of impressions. In his evaluation, compound was not deemed to be a dimensionably stable material. Most impression materials warp upon standing and should be cooled sufficiently and poured immediately.

In the case of alginates it was advised to leave the impression in the mouth for three minutes after the gel has taken place and then it should be jerked out, not teased out. These impressions should be poured within 15 minutes after removal from the mouth or accuracy is impaired. Storage of impressions is inadvisable.

Dr. Skinner felt that the synthetic rubber compounds used for single tooth and bridge impressions have proved to be almost a universal impression material. Contrary to manufacturers' claims, he thought that the impression should be poured within 30 minutes to obtain adequately accurate models.

Research into the materials used in the manufacture of amalgam was treated from the standpoints of composition, treatment and size of particles, alloy-mercury ratio, trituration time, flow and condensation.

Dr. F. Lloyd Jacobson of the University of Washington Dental School received a flattering introduction which prompted him to say that he was eager to hear his own address. He dealt with the practical application of dental materials in actual mouth operations, emphasizing faithfulness to margins, permanence of form, aesthetics, solubility and ease of insertion. Some of the lesser materials such as silicate cements and mouth-cured resins were given a place in the transition period for badly broken-down teeth, especially the peanut butter, jam and jelly cases.

There were two other lecturers who deserve mention. Mr. Robert Paulsen, executive secretary of the Washington State Dental Association, spoke on the relationships between dentists and dental technicians. The burden of his address was that the cause must be treated. Dentists have the privilege, not the right, to practise dentistry. The dental profession should not accede to any compromise which would lessen their control. Planned action should be taken, and there should be a friendly relationship between the dentist and his laboratory man.

Dr. Gerald L. Burke, orthopedist of Vancouver, spoke on the subject: "A Multitude of Observations from a Single Case", which

proved to be the very frustrating case of a fractured femur in a pregnant patient, when delivery unexpectedly took place during the first bone operation. The lecture developed into an enlightening exposition of the metals used in bone fracture cases.

One of the most popular aspects of the convention was the Saturday morning chair and table clinics, 25 in all. A wealth of talent was displayed, and it was felt that time did not suffice to witness all of the presentations that were given.

Between lectures and clinics, coffee and fruit juices were dispensed. This corralled the members, making it unnecessary for them to frequent Vancouver's many adjoining pubs where they might have been lost.

At the 42nd annual business meeting of the association two senior members of the profession were honoured. Dr. W. D. Smith of Grand Forks was presented with an Honorary Life Membership. (Dr. C. E. Bradshaw of Nelson, similarly honoured, was not present.) A certificate of membership in the 75-50-25 Club was given in ceremonial fashion to Dr. Frank O'Neil. The club is composed of those who have practised for 50 years, 25 of them in B.C., and who are 75 years of age.

Dr. Beamish in his valedictory gave the highlights of the year's activities and recommended that three additional areas, namely the Upper Island, Prince George and Kootenay districts, should each have a delegate to whom the executive minutes would be sent. It would be the duty of this representative to explain matters to the men in his area and to attend one executive meeting each year.

New officers for the coming session are:

President: Dr. W. P. Munsie, Vancouver.
 Past President: Dr. L. W. Beamish, New Westminster.

President-elect: Dr. C. B. Jameson, Victoria.

Secretary: Dr. B. M. Plumb, Vancouver.

Treasurer: Dr. O. F. Wright, Vancouver.

Directors: Drs. J. M. McDougall, Vancouver; T. W. James, Victoria; F. A. Mitchell, Coquitlam; F. K. Berry, Vancouver; I. U. MacIntosh, New Westminster and H. R. Henderson, Kelowna.

Throughout the convention one was conscious of an undercurrent of enthusiasm. Convention chairman Norman Ferguson and his cohorts are to be complimented for providing a well-planned three days of instruction, good fellowship and good fun.

D. H. M.

Vancouver and District Dental Society

Dr. Orville Wright has been named president-elect of the Vancouver and District Dental Society.

The meeting also saw Dr. Max Nacht take over as president from Dr. J. G. Ryan. Secretary this year will be Dr. Jack Carefoot of West Vancouver and two new directors are Dr. William Elliott and Dr. Basil Plumb.

Dentists Plan Clinic

One-dollar-a-visit dentistry is being planned for Vancouver citizens in the low income bracket.

The College of Dental Surgeons of British Columbia announced recently that negotiations are now under way with the provincial government for the establishment of a clinic for those who could not otherwise afford dental care.

Spokesman for the College estimated that 200 dentists would donate services to this clinic.

The government has been asked to put up approximately \$70,000 to equip the clinic. All aspects of dentistry will be provided.

A "minimum" fee of about \$1 will be charged. This is planned to cover the cost of administration and necessary permanent staff of nurses and stenographer.

The plan is designed along the lines of the Dade County Clinic of Miami, Florida. Circumstances there are similar to those in Vancouver in that neither has a dental college and the clinic can be used for instruction of dentists, dental nurses, and technicians.

NEW BRUNSWICK

Saint John Dental Society

Dr. John G. Blackmer was elected president of the Saint John Dental Society at their annual meeting held at the Admiral Beatty Hotel with Dr. G. L. Ramsay in the chair.

Other officers elected for the coming year are: vice-president, Dr. Leo A. Cormier; secretary-treasurer, Dr. Arthur Steuermann, and treasurer, Dr. Daniel L. Britt. Chairman of the nominating committee was Dr. E. D. Halford.

A highlight of the meeting was the showing of two colour films dealing with surgery of the jaw.

During the business sessions, reports were received from various committees, and the minutes of the previous meeting were read.

ONTARIO

Ninth Annual Convention of the Canadian Society of Dentistry for Children

Against the back-drop of Niagara's scenic wonders, and with a prideful sense of new accomplishments, the Ninth Annual Convention of the Canadian Society of Dentistry for Children was held Saturday May 10th, 1958, in the Sheraton Brock Hotel, Niagara Falls, Ontario.

This was a day of "firsts" for the Society, and many groups and individuals can share the credit for a splendid example of co-ordinated effort and achievement within the frame-work of organized Dentistry.

It marked the Society's first Convention since becoming a section of the Canadian Dental Association . . . and as if to stress the "first" theme, the Convention was moved from its birth-place to the City of Niagara Falls. This proved to be a stimulating challenge to all supporters of the Society; and together with the magnificent co-operation of the Niagara Falls Dental Society, the Niagara Peninsula Dental Association and its Ladies' Auxiliary, a program was provided which extended fellowship to all delegates and their wives, as well as the usual high-calibre scientific techniques and teachings in the field of dentistry for children. These papers will be covered through the pages of the Journal of the Canadian Dental Association.

Another innovation . . . perhaps the highlight of the many new ideas during the program . . . was the presentation of Certificates of Merit to two youngsters from the elementary school level in Niagara Falls. The recipients of these Certificates were adjudged to possess the best examples of good oral health to be found in the upper elementary grades in the schools which were screened, and typified the objective toward which the philosophy of the Society is directed. The children were the guests of the Society at the noon luncheon and added considerable charm to the head-table.

During the luncheon Dr. D. G. Johnstone of Niagara Falls was installed as the new President, taking the gavel from Dr. Gordon Nikiforuk of Toronto, the Immediate Past President. Very shortly thereafter, Dr. S. A. MacGregor, the first President of the Society, honoured Dr. Roy G. Ellis, Dean of the Faculty of Dentistry, University of Toronto, by presenting him with an Honorary Life Membership in the Canadian Society of



*DR. D. G. JOHNSTONE, President
Canadian Society of Dentistry for Children*

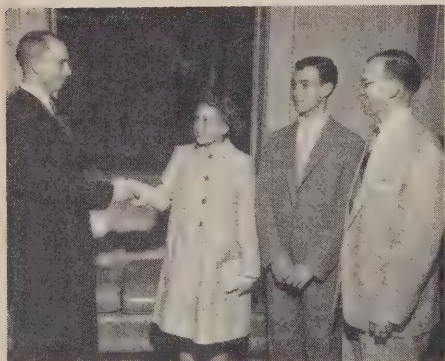
Dentistry for Children. Dr. Ellis has made a great contribution to dentistry for children, and the Society is proud that he accepted this well-deserved citation.

Now let us turn from the full day of table-clinics and scientific presentations to yet another new phase of the program . . . the activities for the wives of the delegates. From the Friday evening hospitality room, where delegates and wives were welcomed upon registration, until the farewell buffet and dance on Saturday, the wives kept pace with their busy husbands, with a full program of their own.

A morning coffee party, followed by a luncheon and fashion show, filled the day for the more than eighty wives who attended the Convention. From the comments heard on the dance floor later on Saturday evening, the ladies had fully enjoyed their first opportunity to accompany their husbands to this Convention, and it would appear that this "first" for the Society will not be the last.

That the whole Convention was a success can be attributed to the willingness of many people to work as a great team, with a common objective . . . to make this, the ninth annual Convention of the Canadian Society of Dentistry for Children, one to

SCENES FROM THE ANNUAL MEETING OF THE CANADIAN SOCIETY OF DENTISTRY FOR CHILDREN.



CONGRATULATIONS TO THE CERTIFICATE OF MERIT WINNERS.

Dr. D. G. Johnstone congratulates Catherine MacDonald and Anthony Di Giacomo, winners of the contest held in the elementary schools of Niagara Falls to find the boy and girl with the best examples of good oral health. Dr. George Burgman, President of the Niagara Falls Dental Society is on the right.



HONORARY LIFE MEMBERSHIP CON- FERRED ON DEAN ELLIS.

Dr. S. A. MacGregor presents Honorary Life Membership to Dean Roy G. Ellis. On the left is Dr. Gordon Nikiforuk, Honorary President, Dr. D. G. Johnstone, President is on the right.

L to r. Mrs. George Burgman, wife of the President of the Niagara Falls Dental Society; Mrs. F. Harold Shepherd, wife of the Immediate Past President of the Ontario Dental Association; Mrs. Gordon Nikiforuk and Mrs. D. G. Johnstone, wives of the Honorary President and President of the Canadian Society of Dentistry for Children, respectively; Mrs. C. J. Osadetz, President of the Ladies' Auxiliary to the Niagara Peninsula Dental Association; Mrs. Roy Ellis, wife of the Dean of the Faculty of Dentistry, University of Toronto, and Mrs. D. R. Copeland, wife of the President of the Niagara Peninsula Dental Association.



remember. No one will deny that this goal was attained and a fervent hope is expressed that the new ideas which were so confidently tried . . . and which came off so well . . . will be repeated. We believe that this Society will grow and gain in stature by such co-operative efforts as was shown in Niagara Falls, on Saturday, May 10th, 1958.

F.E.D.

91st Annual Convention of the O.D.A.

Changes at the Royal York produced changes in the Convention program. This year there were 42 group clinic sessions held in smaller rooms than usual. This proved to be a popular change, providing more intimate and informal clinics. They were all well attended and due to the increased number of them, there was little



Dr. C. L. Strachan, London, new O.D.A. president receives Jewel of Office from Installing Officer Dr. Russell Woods of Watford. Mr. John Fisher, guest speaker, is shown on the left.

crowding. There were 4 scientific motion picture sessions this year, which were all well attended, the average being about 150. Also there were a number of other changes, many of which will no doubt be adopted in future years.

Class reunions were very much in evidence this year. There were 18. Notable among these were the classes of OT8, 2T3, and 3T3.

The class of OT8 celebrated their 50th reunion, and what a time they had! There were 11 of them. They met in their reunion suite, had their class dinner at the Granite Club, and met for the various Convention functions together.

2T3 has a Whizz-Bang reunion—all 110 of them. Under the chairmanship of Dr. Perc Lowery, along with the secretary treasurer Dr. Harold Skilling, they really celebrated their 35th reunion in the grand old army style. They started out with a "family night" in the form of a buffet supper at Hart House on Sunday, and had a reasonably full program going for the entire Convention. The class spirit is still there, the same as it was during college days.

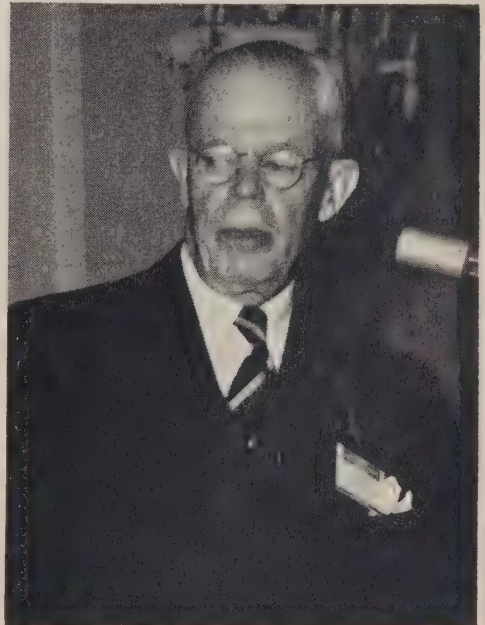
The year 3T3 had a 65% turn out, for their 25th reunion, thanks to the energy of their secretary, Dr. Art Henry. They had a class reunion dinner on Monday night, and had a reunion suite at the Royal York as their G.H.Q. during the entire Convention. They

had such a good time that they decided to have a reunion every year.

At the Tuesday luncheon, Dr. C. L. Strachan of London was installed as President of the Ontario Dental Association for the year 1958-1959, by Past-president Dr. Russ Wood. At the same luncheon, Dr. Edmund A. Grant was presented with an Honorary Life Membership in the O.D.A. in recognition of his exceptional work in the interest of organized dentistry over the past 40 years.

The Dental wives excelled themselves by extending the usual hospitality, organizing their various functions, and carrying them out in a most efficient manner. The ladies' dinner and Fashion Show by Yvonne Jermain almost tripled the attendance of previous years, and indicates the popularity of this affair for the entertainment of the ladies.

The Convention dinner, entertainment and dance on Tuesday night also enjoyed a record attendance. Stanley St. John was responsible for the entertainment and music. Of course the enthusiasm of the crowd, particularly the class reunion groups, helped considerably. All in all it was a delightful



DR. EDMUND A. GRANT
Honorary Life Member, O.D.A.



273 Enjoys Its 35th Reunion

blending of the social with the professional.

The nurses had a complete Convention program of their own. This year their printed program was included in the regular Convention program, which seemed to help with the feeling that they are an important factor in the success of the Convention activities. The nurses presented 12 table clinics and from these, 3 were selected as prize winners. These 3 repeated their clinics at the Convention table clinic session on Wednesday afternoon, and were well received.

The number of exhibitors was down slightly from last year due to the shortage of space this year. However they enjoyed good crowds and all seemed enthusiastic about the interest shown in their exhibits and the business written.

The total Convention attendance reached 1,562 which was an increase of 29 over last year, and establishes a new record. The various changes in the program, such as more and smaller group clinics have proved themselves popular, and will lay the foundation

for bigger and better conventions in the future.

Dr. C. L. Strachan succeeded Dr. F. Harold Shepherd to the presidency of the Association, Dr. Shepherd becoming honorary president as well as historian-archivist. These men will be joined in the work of the Association by: President-elect, Dr. E. T. Guest, Toronto; secretary-treasurer, Mrs. W. C. Durham, Toronto; board of governors, Drs. W. W. Philp, E. A. White, both of Toronto; J. B. Taylor, London; T. G. White, Sault Ste. Marie; K. M. Phillips, Welland; E. E. Johns, Kingston, and J. R. Jeffery, Kirkland Lake.

Dental Public Health Committee members elected were: Drs. R. R. Butler, D. L. Rife, K. W. Davey, H. A. Swales, Marjorie Jackson, M. G. Boyes, R. O. Fisk, and D. J. Mitchell, all of Toronto, and K. F. Pownall of Mimico.

Dr. R. S. Woollatt and Dr. W. R. Jackson of Toronto were elected to the Benevolence Committee with Dr. R. G. Hyde of Hagersville.

Ontario Dental Curling Association

At the 91st annual Ontario Dental Association Convention held in Toronto the members of the Ontario Dental Curling Association elected their officers for the 1958-1959 season.

The following were elected.

President, Dr. A. R. Poag, Hamilton; Vice-President, Dr. G. V. Morton, Toronto; and Secretary-Treasurer, Dr. R. F. Rogers, Welland.

The Board of Directors are: Drs. F. F. Baker, London; J. F. Brock, Oshawa; H. Campbell, Orangeville; B. M. Johnston, Barrie; R. W. Marshall, Toronto; M. G. McCartney, Peterborough; J. C. McLaurin, Toronto; and J. A. Spellman, Kitchener.

The Prize Committee is Dr. G. V. Morton and Dr. E. Rollaston of Toronto.

The ninth annual Bonspiel for the Charlie McKenna and University of Toronto Alumni Trophies will be held next November at the Kitchener, Oshawa, or Welland Curling Clubs.

\$5,000.00 For Dental Research

The University of Toronto has announced the following bequest from the will of the late Dr. Thomas B. Armstrong of Toronto.

"The sum of \$5,000 to the Governors of the University of Toronto to be used for research in the Faculty of Dentistry in the said University."

The money is to be used in connection with the development of radioactive isotope research in the new laboratories of the Faculty of Dentistry to be completed in the fall of 1959.

PRINCE EDWARD ISLAND

Prince Edward Island Dental Association

The Dental Association of Prince Edward Island at its annual meeting held at the Charlottetown Hotel on May 16th, re-endorsed the resolution on fluoridation of a year ago. They also suggested that the time had now arrived when the City Council of Charlottetown and the Town Council of Summerside should take action and proceed with the fluoridation of their water supply.

It was emphasized at the meeting that fluoridation is now generally recognized as being a safe, efficient and economical way of reducing dental cavities, not only in children, but also in adults as well. The opposition to fluoridation has largely died out as the arguments against it have been

disproven and the truth accepted that fluoridation really works and is the greatest weapon known to medical and dental science today for the prevention of tooth decay.

Dr. G. D. Barrett of Charlottetown was elected president; Dr. R. S. Romoke of Summerside, vice-president; Dr. Heath MacIntyre, Charlottetown, secretary, registrar, treasurer, Dr. A. L. MacIssac, Charlottetown, and Dr. W. S. MacIntyre, Montague, were elected members of the Council.

Dr. L. I. Duffy paid a very fine tribute to the memory of the late Dr. H. M. MacKenzie, who recently passed away very suddenly. One minute silence was observed in respect to the memory of Dr. MacKenzie who was vice-president of the Dental Association.

QUEBEC

La Société Dentaire de Montréal

Elects Officers

La Société dentaire de Montréal has a membership of two hundred French speaking dentists from Montreal and district. The final meeting of the season was held recently at the University of Montreal, and the officers for the 1958-1959 term were elected.

President, Dr. Paul Lussier; first vice-president, Dr. Marc Thibault; second vice-president, Dr. Clarence Bouillon; secretary, Dr. Jacques Bilanger; assistant-secretary, Dr. Jean Guimond; treasurer, Dr. Paul Manseau; archivist, Dr. Roger Charette; adviser, Dr. Gilles Baril; and councillors Drs. Robert Dupont, Andre Dalpé, Florent Terriault and Claude Vachan.

Mount Royal Dental Society

The annual Installation Dinner of the Mount Royal Dental Society, marking the close of activities for the 1957-1958 season, took place at Ruby Foo's in Montreal on Tuesday May 6, 1958. The old Executive was discharged by Dr. George Zimmerman following which Dr. Robert Weiner installed the incoming executive. The roster consists of:

President, Dr. A. Colle; Vice President, Dr. D. Steinberg; Secretary, Dr. I. Lubin; Treasurer, Dr. C. G. Baer; Asst. Secretary, Dr. H. Rosen; Historian Archivist, Dr. M. H. Toker.

Members of the Executive:

Dr. I. B. Hyams, Dr. S. Feldman, Dr. L. Druckman, Dr. M. Gornitsky, Dr. S. Joffe, Dr. C. Solomon, Dr. A. Bazerman (ex officio).



A.A.D.M. AWARDS HONORARY MEMBERSHIPS

Dr. M. Archambault, President, American Academy of Dental Medicine presents Honorary Memberships to Dr. Don W. Gullett, Secretary, Canadian Dental Association (left) and Dr. Adelard Groulx, Director, Department of Health, City of Montreal.

Arrangements for the evening were ably executed by Dr. S. Joffe who commissioned professional entertainment. A script written exclusively for dentists and dental wives added a lighter note to the thoroughly enjoyable evening.

H. R.

American Academy of Dental Medicine Holds Meeting

Dr. Don C. Lyons, Jackson, Mich., was installed in office as president for the fiscal year 1958-'59 of the American Academy of Dental Medicine at the concluding session of its 12th annual meeting at Hotel Sheraton-Mount-Royal recently. He succeeded Dr. Marcel B. Archambault, Montreal, whose term expired with the meeting.

Others taking office with Dr. Lyons were: Dr. George G. Stewart, Philadelphia, president-elect; Dr. Hermann Becks, San Francisco, vice president; Dr. Harold Lavine, Baltimore, secretary; Dr. William M. Greenhut, New York, treasurer, and Dr. Irving Yudkoff, New York, editor of the Academy's Journal of Dental Medicine. Drs. Becks, Greenhut and Yudkoff continue previous terms.

More than two hundred members and guests of the Academy attended the three-day meeting, which featured the inter-relationship between dentistry and medicine in a number of practice areas. Outstanding clinicians of McGill University, the University of Montreal and the Montreal Children's Hospital discussed various aspects of

endocrinology, pharmacology, obstetrics, dermatology, and the cleft palate problem.

At the Awards Dinner held May 29, honorary memberships were conferred upon Dr. Adelard Groulx, Director of the City of Montreal Health Department, and Dr. Don W. Gullett Secretary of the Canadian Dental Association.

SASKATCHEWAN

Saskatchewan Dental Association

Dr. C. Castaldi of the Faculty of Dentistry, University of Alberta, recently presented clinics on Paedodontics in the various districts of the province. These presentations were sponsored by the Saskatchewan Dental Association.

Dr. Castaldi is a graduate of the Faculty of Dentistry of the University of Toronto. He pursued post graduate studies at Northwestern University in Chicago and accepted a staff appointment. He then went on staff at Indiana Dental College and it was from there that he went to Alberta as Professor of Paedodontics.

His clinics were exceptionally well attended and were found to be very practical and of great value to the practice of dentistry for children. He carried away from meetings the best wishes for success in his work at the Faculty of Dentistry in the University of Alberta.

L.D.H.

THE CORPS

Colonel Baird Visits Bethesda

Colonel K. M. Baird, O.B.E., C.D., Deputy Director General Dental Services made a liaison visit to the U.S. Naval Dental School, Bethesda, Maryland to discuss professional courses and the Mass Casualty Treatment training program.

Colonel Harris Deputy-Director

Colonel H. L. Harris, C.D., of Kentville, N.S. will be appointed as Deputy Director of Dental Services at National Defence Headquarters in Ottawa. The appointment is effective on July 12, 1958. Colonel Harris has been serving as Command Dental Officer at Headquarters, Eastern Command, Halifax, N.S. for the past five years.

Lt.-Col. Leman to Halifax

Lt.-Col. Alex C. Leman, C.D., of Toronto will be appointed Command Dental Officer, Headquarters, Eastern Command, Halifax, N.S. The appointment will take effect this summer. Lt.-Col. Leman is now Commanding Officer of 35 Field Dental Unit, 1 Air Division, R.C.A.F., at Metz, France.

Officers Present Clinics

Lt.-Col. A. T. Roger, M.B.E., C.D. and Lt.-Col. G. C. Evans, C.D. of the staff of the Royal Canadian Dental Corps School appeared in the programs of the Ontario Dental Convention.

Lt.-Col. Roger presented a one-hour clinic on "Surgical Preparation for Oral Prosthesis". Lt.-Col. Evans presented a paper and demonstration on "Auto-curing Acrylics for Aesthetics and Space Maintenance in Bridgework".

Officers Leave for Europe

The following officers, accompanied by their families will be leaving Canada this summer on posting to Europe:

Major G. E. Windsor from R.C.A.F. Station, Cold Lake, Alta.

Captain J. T. Marshall from R.C.A.F. Station, Rockcliffe, Ont.

Captain H. G. Bunston from R.C.A.F. Station, Uplands, Ont.

They will serve with the Canadian Air Division, whose headquarters is near the fortress city of Metz, and at fighter stations

located on both sides of the border of France and Germany with Baden-Baden, Luxembourg and Paris near enough for week-end visits.

Officers Return from Europe

The following officers, accompanied by their families are returning after a tour of duty with the Air Division in Europe. They will be employed at the locations shown:

Major W. R. Thompson, Camp Gagetown, N.B.

Major R. J. K. Pyne, M.C., Vancouver, B.C.

Captain C. R. Pugh, R.C.A.F. Station, Rockcliffe, Ont.

Lt.-Col. Oldfield Attends Course

Lt.-Col. S. K. Oldfield attended a course in Crown and Bridge at the University of Michigan.

Colonel George L. Cameron Laid to Rest

Full military honours were accorded the late Colonel G. L. Cameron, D.S.O., O.B.E., V.D., (Ret'd), Honorary Colonel Commandant Royal Canadian Dental Corps at his interment in Ottawa, on May 5th, 1958.

The Reverend Doctor A. Ian Burnett delivered the eulogy, extolling Colonel Cameron's life of service, as a soldier, to organized dentistry and as a Christian citizen to his church and community. Doctor Burnett was assisted by Lt.-Col. M. J. D. Carson, Deputy Director of Chaplain Services (P).

Following the service at St. Andrew's Presbyterian Church which was attended by senior officers of the Armed Forces, officers of the Corps, representatives of the civilian profession and many others who mourned his passing, the funeral procession was formed and proceeded with muffled drums up Wellington Street before embussing for Beechwood Cemetery where the procession was reformed and honours were paid at the graveside.

Honorary Pall Bearers were:

Brig. E. M. Wansbrough, Col. C. B. H. Climo, Col. W. E. Meldrum, Col. K. M. Baird, Col. G. B. Shillington, Col. H. R. McLaren, Lt.-Col. T. L. Marsh and Lt.-Col. J. G. Hamilton.

Insignia Bearer was Lt. E. I. Tullis.

GENERAL NEWS

Fluoridation Now Serves 33.5 Million in 1,644 Communities in U.S.

Water fluoridation as of May 1, was in operation in 1,644 communities with combined populations of 33,418,719 persons, the U.S. Public Health Service reported recently.

U.S. Has 100,534 Dentists, An Increase Of 1,307 In A Year

The United States had 100,534 dentists in mid-1957, an increase of 1,307 dentists in a year and 3,005 in two years, the A.D.A. Bureau of Economic Research and Statistics estimated last week. The report was based on the 1958 American Dental Directory and included retired as well as active dentists. There were an estimated 81,000 dentists engaged in private practice. Included in the new total were 92,685 civilian dentists and 7,849 dentists serving in the armed forces, the U.S. Public Health Service and the Veterans Administration. Despite the increase in numbers of dentists, the new tabulation indicated a continuation of the trend nationally of population increasing somewhat faster than numbers of dentists. There was one dentist to every 1,679 persons in the newest report compared with one to every 1,671 persons a year earlier

and one to every 1,667 persons two years previously.

During the period July, August and September, 1957, residents of the United States visited their dentist at a rate equivalent to 1.6 visits per person per year. Persons living in urban areas visited their dentist at a rate of 1.9 visits per year, as compared with 1.2 visits per year for persons living in rural areas. About 41 per cent of the dental visits made during this period involved fillings, while about 20 per cent involved extractions.

As of August 1957, approximately 36 per cent of the population had visited their dentists at least once within the preceding year. However, 42 per cent had not been to a dentist in 3 or more years. A greater proportion of females than males had been to a dentist within the past year, 38 per cent for females as compared with 34 per cent for males. Thirty-nine per cent of urban persons had visited the dentist within the past year as compared with 32 per cent of the rural population.

There were approximately 21.6 million edentulous persons in the United States as of August 1957. This represents 13 per cent of the population. The proportion of edentulous persons increases with age, with about 65 per cent of persons 75 years and over being edentulous.

IN MEMORIAM

William S. Lackner—Dr. William S. Lackner formerly of Kitchener, Ontario, died following a brief illness at his home in Tucson, Arizona, in May 1958.

Dr. Lackner was born in North Waterloo County and attended public school under Edward Lackner Diefenbaker. He attended Kitchener Collegiate and Technical Institute and Ontario College of Dental Surgeons, graduating in 1911. He set up a successful dental practice in Kitchener and cared on there for two years. Following a brief illness, he sought a southern climate, locating in Tucson, Arizona, where he established a dental practice which he enjoyed there for well over forty years. He was also owner and operator of the well-known Fleur-de-lis Ranch, thirty-five miles from the city, where he resided for over thirty years.

During his earlier years in the west, his main hobby was hunting mountain lions with his own trained dogs. He wrote a number of articles on his experiences with accompanying photographs which were carried by "Outdoor Life". His prize cattle and saddle horses were a feature for many years in the annual Tucson Rodeos. As a western rancher, he was highly respected as an "Old Timer", an expert judge of livestock and a lover of animals, especially his dogs and riding horses. He was an ardent supporter of the Y.M.C.A. and other benefits, and was a Rotarian for some years. He was a member of the Oracle Community Church. He retired from dental practice less than a year ago.

He is survived by his wife Louise, a son, William, and three sisters.

Carl R. Dexter—Dr. Carl R. Dexter of Grand Manan, N.B., died suddenly on April 24, from a heart seizure, while busy in his office in North Head. Dr. Dexter was 59.

Dr. Dexter was born in Truro, N.S. in 1899. He graduated from Colchester County Academy and enlisted in the Canadian Army, serving overseas in the First World War with the Royal Canadian Artillery. After his discharge from military service, he entered Dalhousie University, where he graduated in 1924 with the D.D.S. degree.

Dr. Dexter opened his practice in Grand Manan in 1925 and became the Island's first resident dentist. He was active for many years in sports and interested in many fields of public endeavour, including the Grand Manan Historical Society, of which he was an early member. He was a charter member of Grand Manan branch of the Canadian Legion. Through his professional work, his interests and organizations, he had many friends both among residents and summer visitors.

Surviving is his wife, Molly, one daughter, Frances, and one son, Joseph, one granddaughter, two brothers and several nieces and nephews.

William Slater—Dr. William Slater of Winona, Ontario, died recently at the age of 80.

Dr. Slater was born in Galt, Ontario and received his early education at Galt Collegiate. He graduated from the Royal College of Dental Surgeons, University of Toronto in 1916. He set up his practice in Galt from 1916 to 1923, then 1923 to 1941 in Merritton, and from 1946 to 1948 in Winona.

Dr. Slater was a member of local curling and bowling clubs.

H. M. MacKenzie—Dr. H. M. MacKenzie of Charlottetown, P.E.I., died suddenly on May 7th. He was 54. He was stricken suddenly while on a fishing trip and died before reaching a doctor's office.

A native of Westville, Dr. MacKenzie studied at Mount Allison University, Sackville, N.B. and graduated in dentistry from John Hopkins Dental College, Baltimore, Md. in 1932.

Soon after graduation he opened a practice in Charlottetown which he successfully carried on until his death.

In 1940 he entered the armed services to serve in the dental corps. During the war he served in England, Italy, France, Holland and Belgium. He was discharged from the army in 1946 with the rank of captain.

He is survived by his wife Helen, two daughters, Helen and Elizabeth, and his father and stepmother.

Isadore B. Hyams—Dr. Isadore B. Hyams of Montreal, died suddenly on May 20th at the Jewish General Hospital. He was 45.

Dr. Hyams was born in Montreal. He graduated from Montreal High School and then McGill University. He continued his dental studies on a fellowship to the Guggenheim Dental Clinic in New York City.

During the war he served as a captain in the Dental Corps until 1946.

Past president and a member of the executive committee of the Mount Royal Dental Society, Dr. Hyams was dental officer at the Grace Dart Hospital and a member of the staff of the Jewish General Hospital.

Dr. Hyams was traffic safety chairman of the Willingdon Home and School Association. He was a member of the Y.M.H.A. and a temple member of the Beth Shalom.

Surviving are his wife, Hannah, his son, Peter, daughter, Barbara, his parents, Mr. and Mrs. Hyams, brother David and sister Marjory.

William Alfred McDowell—Dr. William Alfred McDowell of Atwood, Ontario, died in April 1958.

Dr. McDowell was born at Listowel in June 1874 and received his early education in London, Ontario.

He graduated from the Royal College of Dental Surgeons of Ontario in 1900 and practised in Listowel from 1900 to 1920, then in Atwood from 1920 to 1958.

Dr. McDowell was a member of the United Church and was an Honorary Member of the R.C.D.S.

Mack L. Pratt—Dr. Mack L. Pratt of Manotick, Ontario, died at his home on April 25th following a brief illness. He was 58.

Dr. Pratt was born in Manotick and received his early education in Manotick and Ottawa after which he attended the University of Toronto. He graduated from the R.C.D.S. of Ontario in 1921.

He practised in Manotick and district until 1940 when he joined the Canadian Army Dental Corps and served in Canada and England until the end of the war. He resumed his practice in Manotick in 1945.

Dr. Pratt was a member of the South Carleton Branch, Canadian Legion, Orange Young Britons Associations, Loyal Orange Lodge, 477, Manotick, and was a past president of the Manotick Recreation Association.

Surviving are his wife Harriet, a sister, Mrs. D. A. Johnston, a brother, William, and several nieces and nephews.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th - 29th
1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 4th - 7th
1961	Saskatoon, Saskatchewan	June 25th - 28th

1967
Toronto, Ontario
*(Centennial Celebration
of Dentistry in Ontario)*

FUTURE EVENTS

Date	Function	Location	Officer	Address
July 20-23, 1958	52nd Annual Session West Virginia State Dental Society	Greenbrier Hotel, White Sulphur Springs, W. Va.	Dr. T. A. Edwards, Chairman,	822 S. Kanawha St., Beckley, W. Virginia
Aug. 27- Sept. 4, 1958	46th Annual Meeting International Dental Federation	Brussels, Belgium	Dr. M. Joachim, Secretary,	67 Rue de Treves, Bruxelles, Belgium
Sept. 1-3, 1958	Saskatchewan Dental Association Convention and Refresher Course in Oral Surgery	Regina, Saskatchewan	Dr. G. W. Schwann, Registrar,	613 McCallum-Hill Bldg., Regina, Sask.
Sept. 14, 15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon,	500 Albert St., Kingston, Ont.
Sept. 25 & 26, 1958	Official Opening of New Dental Building	Dalhousie University, Halifax, N.S.	Dean J. D. McLean	Dental Building, Dalhousie University Halifax, N.S.
Oct. 6-10, 1958	Special Participation Course— Periodontology	Tufts University, Boston, Mass.	Director of Graduate & Post-Graduate Studies Tufts University School of Dental Medicine	136 Harrison Ave., Boston, Mass.
Nov. 1, 1958	Annual Meeting—New Brunswick Dental Society	Stain John, N.B.	Dr. E. D. Halford, Secretary,	459 DeMonts St., Lancaster, N.B.
Nov. 6, 7, 8, 1958	American Academy of Periodontology Annual Meeting	Baker Hotel, Dallas, Texas	Dr. H. A. Hartman, Chairman	4187 Pearl Road, Cleveland 9, Ohio.
Nov. 7-8,	Meeting of American Academy of Gold Foil Operators	Dallas, Texas	Dr. C. C. Latham Secretary	P.O. Box 266, Coronado 18, California.
Dec. 8-12, 1958	Greater New York Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.

SIXTH BIENNIAL FALL REFRESHER COURSE FACULTY OF DENTISTRY, UNIVERSITY OF ALBERTA

Dates: Sept. 4 and 5, 1958.

Guest Clinician: John R. Thompson, D.D.S., M.S.D., M.S., Professor of Orthodontics, Northwestern University, Chicago. Dr. Thompson will speak on Growth and Development of the Face, Vertical Dimension of the Face in Prosthetics, Position of the Mandible, and Occlusal Equilibration.

Guest Speakers: J. D. M. Alton, MSc., M.D., former Resident in Plastic Surgery at the Glasgow Royal Infirmary, Montreal Children's Hospital, and Roosevelt Hospital, New York, speaking on "The Care of the Cleft Lip and Palate Patient".

Joseph C. Muhler, D.D.S., Ph.D., Associate Professor, Dept. of Chemistry and School of Dentistry, Indiana University, speaking on "Recent Knowledge Regarding the Action of Fluorides in Dental Caries Prevention with Special Reference to Stannous Fluoride."

Table Clinics: Orthodontic and Paedodontic Departments, University of Alberta.

Tuition: \$15.00.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Etiquette professionnelle en chirurgie dentaire

par JEAN-PAUL HOULE, D.D.S., Montreal

La chirurgie dentaire est une jeune profession. En effet, à venir jusqu'au milieu du siècle dernier, il y avait bien un certain nombre de praticiens exerçant leur art isolément ou à l'ombre de la médecine, mais pas de profession dentaire. La fondation de la première école dentaire, à Baltimore, en 1840, marque la naissance de la profession. Un programme bien défini de matières médicales: anatomie, physiologie, pathologie, thérapeutique, élevait notre art au rang de profession libérale et en faisait une branche de la médecine.

Au Canada, dans la province de Québec en particulier, cet avènement s'est fait

attendre. Ce n'est qu'en 1892 qu'est ouverte la première école dentaire.

Mais que de chemin parcouru en 65 ans. Les gens ont cessé de considérer la profession comme étant uniquement une pourvoyeuse de pièces de prothèse. A l'Université de Montréal, l'enseignement s'est haussé à un niveau comparable à celui des facultés dentaires américaines qui sont à la pointe du progrès. Enfin les dentistes du pays et de la province se sont groupés en de puissantes organisations capables de promouvoir l'avancement de la science et l'éducation du public.

Devant ces perspectives encourageantes, il n'y a cependant pas lieu de croire

que tout est parfait dans notre profession. Nous verrons comment les problèmes de la profession ne sauraient être réglés que par l'amélioration des individus qui la composent, comment la discipline personnelle seule permettra au dentiste d'être vraiment un homme de science, un homme de société, un homme d'affaires, et, avant tout, un honnête homme. Et cela parce qu'il fait partie d'une profession libérale.

C'est ce que nous nous proposons de mettre en lumière en considérant le dentiste dans ses rapports avec ses patients, le public en général, ses confrères et la profession. Enfin nous jetterons un regard sur sa vie personnelle et sa vie familiale.

Devoirs du dentiste envers son patient

Entre le dentiste et son patient, il y a des rapports de droits et de devoirs. Le dentiste a surtout des devoirs et le patient des droits. Et les droits de l'un correspondent aux devoirs de l'autre.

On peut réduire à deux les droits du dentiste: des honoraires suffisants et la collaboration du patient au traitement. La liste de ses devoirs est plus longue et plus importante. Il doit être humain, honnête, compétent, discret.

Abordant l'aspect humain de la pratique de la chirurgie dentaire, Pie XII se réjouit de ce que "les spécialités réputées jusqu'ici les plus techniques sont amenées ainsi, en s'approfondissant, à s'insérer dans le grand tableau, toujours plus riche et plus admirable, de la connaissance de l'homme."¹ En effet, l'emprise de la technique ne doit pas faire oublier au dentiste qu'il traite un être humain avec sa douleur, son anxiété, ses handicaps physiques et psychologiques. Son attitude sera ferme et sympathique, amicale et réservée, enfin tout ce qu'il faut pour donner au patient la confiance dont il a besoin et le respect nécessaire à la bonne conduite du traitement. Dans cette ambiance favorable, le dentiste procédera à un examen général, forcément bref mais ne manquant pas de sérieux, de la personnalité et de l'aspect physique du patient.

A ce point de vue, "la plus grave obligation du dentiste consiste peut-être à soulager la douleur"² Aucun délai ne doit être consenti. C'est d'ailleurs une excellente occasion de gagner la confiance du patient et de lui communiquer un sentiment de sécurité. Cette attention à la douleur est particulièrement importante en pédodontie, parce que les enfants sont plus influencables et qu'il est facile de comprendre que l'attitude de l'enfant vis-à-vis du dentiste commandera presque toujours les réflexes de l'adulte."¹ Il ne faut pas s'imaginer que ce sera toujours facile; il faudra de la patience et de la psychologie pour soulager les hypocondriaques et les névrosés de toutes sortes qui ressentent plus vivement la douleur. Il ne faudra surtout pas se laisser aller à l'idée que le patient ne fait que de l'imagination. "The interpretation may be conditioned by fear or neurosis, but the sensation is still pain."³ L'hypnodontie qui commence à connaître une certaine vogue nous semble tout à fait indiquée dans le traitement des hypersensibles et chez ceux qui doivent subir de longs traitements. A cet égard, il est clair qu'un dentiste ne peut se soustraire au traitement d'un cas d'urgence que s'il lui est impossible de le faire. Il convient alors qu'il voit à ce que le patient puisse se faire traiter le plus tôt possible.

Un autre aspect humain de la pratique de la chirurgie dentaire est celui de l'éducation du patient. La personne qui vient chez son dentiste en attend un service complet. Or ce service ne sera pas complet si le patient ne se sent pas en sécurité et il n'aura vraiment ce sentiment qu'en sachant ce qui lui arrive. Qu'il s'agisse de prévention ou de traitement le patient veut et a le droit de savoir. D'ailleurs le patient à qui on explique le pourquoi et le comment du traitement sera flatté et rassuré par l'intérêt que le dentiste lui manifeste. Il donnera la mesure de sa reconnaissance en collaborant au traitement et en devenant un patient fidèle qui se fera un devoir de subir un examen dentaire périodique. Cette éducation du patient peut se faire sans perte de temps

substantielle. Le dentiste peut profiter du temps de l'examen et du diagnostic pour renseigner son patient et s'entretenir avec lui. C'est ce que Miller nous suggère: "A clean and convincing description of the diagnostic procedure and their associated benefits is essential to the patient's acceptance."⁴ Cette éducation de l'individu ne peut qu'avoir une conséquence sociale bénéfique. Le patient éclairé et convaincu du bien fondé des traitements qu'il reçoit se fera spontanément le propagandiste des soins dentaires surtout au sein de sa famille.

Le dentiste doit être honnête. Il est clair que la liberté du dentiste, comme professionnel et l'avantage qu'il possède sur son patient au point de vue connaissance, lui permettent, s'il le veut, d'être malhonnête et souvent impunément. L'honnêteté sera donc chez le dentiste une affaire de conviction.

Un aspect de l'honnêteté du dentiste et qui est peut-être le plus important est l'obligation qu'a le dentiste de se maintenir le plus compétent qu'il le peut. Il faut dire qu'il n'est pas facile d'être toujours à la hauteur de la situation. C'est que, dans ce domaine, le temps perdu ne se rattrape que difficilement, surtout le temps que l'on a perdu à l'université et qui laisse le jeune dentiste dépourvu de la méthode, de l'énergie et de l'idéal nécessaires pour se réserver, à travers les soucis financiers, familiaux et autres, le temps qu'il lui faut pour demeurer à la page au point de vue dentaire. Les fautes d'ignorance coupable et l'application de méthodes surannées sont des façons de tromper le public; façons moins évidentes que d'autres, mais plus pernicieuses et dommageables parce qu'elles entretiennent le public dans une confiante ignorance. En réalité, le dentiste doit le meilleur de lui-même et le plus clair de son temps à sa profession.

En plus d'un minimum de compétence, le dentiste doit connaître les limites de ses capacités, savoir le reconnaître et en tenir compte, c'est à dire, référer le patient qu'il croit ne pas pouvoir traiter convenablement à une personne mieux quali-

fiée. Le patient, en général, saura apprécier ce geste. Au contraire, le dentiste qui se contente d'un traitement palliatif ou inadéquat, ou qui, simplement, laisse faire, se réserve des critiques amères et justifiées qui finiront par ruiner sa réputation. Miller est catégorique sur ce point "The most common complaint heard by the periodontia specialist is 'Why didn't my dentist tell me before about this condition and the possibilities of treatment?' The dentist may have acted through lack of knowledge, a notion the patient could not afford treatment, or a misguided desire to protect the patient's feelings. In receiving a health service, there is little excuse for being old fashioned in one's ideas, remaining uninformed, as for keeping a patient ignorant of a disease which is progressively undermining his health, regardless of the motive."⁴ De même un tort considérable peut être causé au patient si le dentiste se contente de lui faire subir un examen dentaire sommaire; le temps travaillera avec toute condition pathologique que le dentiste n'aura pas su découvrir. A ce point de vue, le dentiste devra souvent défendre le patient contre lui-même et ne renoncer à certaines mesures de diagnostic que devant le refus catégorique du patient et à condition que sa conscience le lui permette.

Une fois le traitement commencé, le patient ne peut être abandonné par le dentiste. Il existe, dès ce moment, un contrat implicite entre le patient et le dentiste et qui oblige ce dernier à terminer ce qu'il a commencé. La mauvaise foi du patient ou la nécessité de recourir à la compétence d'une autre personne peuvent seules amener le dentiste à interrompre le traitement. Il en est de même pour les traitements post-opératoires. Le dentiste ne doit pas s'y soustraire parce qu'ils sont implicitement compris dans le contrat intervenu entre les deux parties.

Le problème des honoraires en est un qu'on ne saurait régler par des règles sévères. Chaque cas en est un particulier. Le dentiste devra tenir compte de l'attitude des confrères, des services rendus, de la condition du patient et du droit qu'il

a de vivre selon un standard digne de la profession.

Quant à la discrétion du dentiste et à la pratique de la dichotomie, nous n'insistons pas; c'est là une question de jugement et d'honnêteté élémentaire.

Devoirs du dentiste envers la société

Le dentiste est, normalement, un homme d'une éducation supérieure; c'est ainsi qu'il doit paraître au public. Le seul exemple d'une saine pratique de son art et d'une vie personnelle digne et élevée suffit à relever le niveau de la communauté et à susciter la confiance des gens en la profession. C'est là un strict minimum de ce que le dentiste doit au public. Mais "le dentiste, grâce à sa formation et à son contact quotidien avec le public a une occasion exceptionnelle d'étudier et de comprendre les problèmes sociaux de son entourage. Il doit diriger ses activités de façon à exercer une heureuse influence dans le milieu où il vit"⁵. Ainsi il peut donner son appui à diverses organisations, surtout à celles qui ont pour but la santé publique.

C'est parce qu'il y a eu des dentistes honnêtes et consciencieux que la Ligue d'Hygiène Dentaire est née et qu'elle a déclenché un vaste mouvement d'éducation populaire. On s'est adressé à ceux qui peuvent avoir le plus d'influence, à "ceux qui ont la charge des jeunes enfants, enfants, c'est à dire des mères de famille, des instituteurs et des institutrices, religieux et laïques, des garde-malades."⁶ On a obtenu la collaboration de nombreux journaux hebdomadaires et des postes de radio. Le travail réalisé est d'importance et mérite des félicitations à ses auteurs. Mais le public est encore loin d'être suffisamment éduqué et aidé. Il y a place pour de plus grands efforts; à cet effet, nous remarquons que malheureusement, la télévision et le cinéma, peut-être les deux plus puissants moyens de propagande, n'ont pas encore servi à répandre l'éducation dentaire.

Il reste que, malgré les efforts d'éducation populaire, la bonne volonté et l'esprit de désintéressement des dentistes en

général, "the first major demonstration of the willingness of dentists to place the welfare of the people over personal gains only recently has been made. I refer to the issue of fluoridation as a means of control of dental caries. . . The doubts that may have existed that dentistry has attained professional status should be dispelled by the activity of dentists in the promotion of fluoridation,"⁷ les traitements dentaires, surtout les mesures prophylactiques, sont encore bien insuffisants. Brauer l'exprime d'une façon saisissante: "the realization that American dentistry had accomplished only a small part of its intended function in society was made clear to the nation in the high percentage of rejections by the armed forces during the early part of World War II. Selective Service data (1943) reveal that, of the first three million registrants examined by the local and induction boards, dental defects were the primary cause for rejection. These deficiencies, preventable in all but the exceptional individual, created a rehabilitation or reconditioning problem unparalleled in the history of either dentistry or military science. This nation, if it is to maintain world leadership, cannot afford at any time to have such a large percentage of its manpower physically ineffective."⁸ Brauer parlait de la nation américaine, c'est à dire de la plus riche du monde et de celle qui est à l'avant-garde du progrès technique en chirurgie dentaire. Au Canada, dans la province de Québec en particulier, la situation est plus critique encore. Il nous semble que le temps est venu d'appliquer de vastes mesures sociales, dans le domaine de la prévention surtout, mais aussi dans celui du traitement. Parlant d'orthopédie dento-faciale, Pie XII disait récemment: "toutes les spécialités tombent d'accord pour déclarer que, là comme ailleurs, la prévention est le seul moyen de porter secours à de vastes ensembles sociaux."⁹ Et il ajoutait plus loin: "plusieurs Etats en ont profité, en intégrant les services dans les programmes de prévention sanitaire et d'assurances sociales."¹⁰

Il ne nous appartient pas de déterminer les modalités selon lesquelles l'Etat devrait intervenir. Nous constatons seulement la nécessité de cette intervention dans le diagnostic précoce et le contrôle de la carie chez les enfants, dans le diagnostic précoce et la prévention des malocclusions, et dans le traitement des diverses difformités congénitales: fissure palatine, prognatisme, etc.

Les dentistes, soit par l'action directe, soit en sympathisant, doivent favoriser toute mesure pouvant aider la population en ce sens, et cela sans se préoccuper de leur intérêt personnel, se souvenant bien que la profession n'a qu'une raison d'être: la santé du public.

Devoirs du dentiste envers la profession et ses confrères

La profession dentaire n'est pas un commerce, mais un service qui, pour être bien rendu, doit l'être dans un atmosphère de sérénité et de dignité. Concurrence, détournement de clientèle, guerre des prix, publicité tapageuse et critiques exprimées publiquement n'ont pas de raison d'être en chirurgie dentaire, comme dans toute profession, parce que nous n'avons rien à vendre, que des services à nous faire rétribuer, lesquels services, pour conserver un haut standard, ne doivent pas être soumis à la loi de l'offre et de la demande. D'ailleurs le public, ne connaissant que peu de chose de la profession, ne saurait que brouiller les cartes en étant mêlé aux affaires de la profession. Les dentistes doivent donc régler leurs problèmes en famille.

Si nous examinons les vingt paragraphes du règlement 36 des "Règlements du Collège des Chirurgiens Dentistes de la Province de Québec," nous constatons que la plupart des actes dérogatoires à l'honneur professionnel ont pour sources l'appât du gain et les divers moyens de commercer qu'un dentiste peut mettre en oeuvre pour réaliser ce gain. Le plus grand danger à éviter nous semble donc être le mercantilisme sous toutes ses formes, c'est-à-dire un état d'esprit. Pour cela, le dentiste doit se pénétrer de la

portée humaine de l'exercice de son art.

Toutes les fautes qu'un dentiste peut commettre contre la profession ne sauraient être ramenées à cette notion de mercantilisme. Il y a aussi le manque d'idéal et le peu de dignité de la vie personnelle du dentiste qui peuvent avoir des répercussions désastreuses sur la bonne renommée de la profession. Il y a surtout les fautes de négligence. Elles constituent selon nous le plus lourd passif de la profession. "Aux yeux du patient, la négligence est impardonnable."² Le patient s'attend, comme à un strict minimum, à ce que l'équipement soit propre et en ordre et que le dentiste soit soigné de sa personne. Le dentiste qui se laisse aller à la négligence se rend coupable d'un grand tort vis à vis de ses confrères et de la profession. En effet "seuls quelques dentistes se rendent responsables des critiques qu'on entend formuler sur la profession toute entière. Selon ce principe, les égarements de quelques-uns jettent parfois du discrédit sur tout notre groupement professionnel."² C'est en étant conscient de ce fait que le dentiste négligent trouvera un puissant motif de s'améliorer.

Nous n'avons parlé jusqu'ici que de l'aspect négatif des devoirs du dentiste envers ses confrères et la profession, mais il y a aussi l'aspect positif et qui est plus important encore parce qu'il conditionne le progrès de la profession. Le dentiste, selon ses talents et les circonstances, ne manquera pas l'occasion de collaborer avec les hygiénistes, les chercheurs, les universitaires, les diverses associations dentaires et le Collège.

Les devoirs du dentiste envers lui-même et sa famille

Que le dentiste et sa famille vivent dans la sécurité, ce n'est que convenable à cause de la valeur des services que le dentiste rend à la communauté; c'est aussi une protection pour cette communauté, car, si les dentistes devaient vivre dans l'inquiétude de leur avenir matériel, ils n'auraient pas la sérénité d'esprit nécessaire pour consacrer toute leur

énergie au service de leurs patient et à l'avancement de la profession.

Pour arriver à ce but, les honoraires du dentiste devront suffire non seulement aux besoins présents, mais aussi à garantir l'avenir de sa famille. Si l'on tient compte de la longueur des études, des dettes qu'elles entraînent souvent, des difficultés de la pratique qui obligent le dentiste à ralentir ses activités assez tôt, du standard de vie auquel son état l'oblige et du temps qu'il doit consacrer à son développement personnel et à l'éducation de ses enfants, on comprendra que ces honoraires devront être assez élevés; le public a, là dessus, beaucoup à apprendre.

Une bonne utilisation de ces honoraires peut cependant contribuer à les ramener à un niveau moins onéreux pour le public. Le dentiste, en effet, doit se doubler d'un homme d'affaires. Il ne s'agit pas pour lui d'être un spécialiste en valeur boursière, mais d'être suffisamment informé pour réussir des placements, obligations, assurances, qui augmenteront le capital constitué par les honoraires.

L'assurance-vie mérite une attention spéciale. En effet, en plus d'être un placement, c'est une protection précieuse pour la famille contre une éventuelle mort prématurée du chef de la famille. Cependant une bonne assurance-vie ne saurait être une raison de vivre au jour le jour. La maladie et les accidents doivent avoir leurs prévisions budgétaires. Si l'assurance-accident, qui est couteuse par ailleurs, protège assez bien l'assuré, il n'en est pas de même de l'assurance-maladie qui contient le plus souvent des clauses trop restrictives. "Generally, disability policies include rather restrictive limits on benefits. This is particularly true of policies covering loss of earnings resulting from disease. Commonly, such policies pay benefits only in the event of total disability and for a maximum period of one year."⁷

Enfin le dentiste verra à tout mettre en oeuvre afin de ne pas avoir à subir de poursuites judiciaires pour pratique

fautive de sa profession. Pour y arriver, il se gardera toujours de travailler dans une fatigue ou sous une tension excessives. Mais la façon la plus sûre d'éviter ce malheur est sans doute une bonne administration du bureau et une tenue de livres impeccable, ne laissant pas de prise à la poursuite. Il est aussi important à ce sujet, que le dentiste n'entreprenne jamais un travail qu'il n'est pas certain de mener à bonne fin. Il y a aussi l'assurance contre la pratique fautive de notre art, mais "dentistes et médecins sont sages de s'assurer contre les risques qui découlent de l'exercice fautif de leur profession. Mais ils font bien de se rappeler que l'assurance est un parapluie plus ou moins percé: il protège contre certains risques, mais non contre tous. Caveat emptor. L'acheteur de ce parapluie fera bien de faire le dénombrement des trous; il s'en rendra compte: l'assurance, qui est une excellente chose, ne le dispense pas de la prudence que lui conseillent implicitement les articles 1053 et suivants du Code Civil."⁸

Il ressort de ce que nous avons dit que le dentiste doit être avant tout un humaniste: psychologie, esprit de désintéressement, compréhension de la souffrance, esprit d'étude, prudence, toutes ces choses sont nécessaires à la pratique de la chirurgie dentaire. Et si l'on examine ce qu'elles supposent de formation personnelle on comprend bien comment la profession dentaire est une profession libérale comme la médecine dont elle est d'ailleurs une branche importante et combien les facultés dentaires ont raison d'exiger des candidats à l'étude de la chirurgie dentaire une préparation supérieure. Ainsi le cours classique, bien qu'il ne soit pas une préparation trop adéquate à l'étude des techniques dentaires, en est une excellente à la pratique bien comprise de ses techniques.

Si nous considérons quelques grands problèmes de la profession dans notre milieu québécois: pratique illégale des mécaniciens dentistes, extraction à ou-

trance, éducation populaire, prévention de la carie et des malocclusions, nous comprenons que la profession a encore plus besoin de "teste bien faite" que de compétence technique.

Enfin nous dirons qu'il n'est pas facile d'être un bon dentiste parce qu'il n'est pas facile d'être à la fois humaniste, homme d'art et de technique, homme d'affaires et un bon père de famille. Y arriver c'est un idéal qui en vaut la peine.

BIBLIOGRAPHIE

- (1) Journal de l'Association Dentaire Canadienne, Janv. 1958. p. 48-49
- (2) Le dentiste et son patient (Publication de l'A.D.C.)
- (3) Oral and Dental Diagnosis, THOMAS ROBINSON 1955. p. 428
- (4) Textbook of Periodontia (Miller) 1950. p. 734-735
- (5) Code d'éthique professionnelle (l'Ass. Dentaire Canadienne)
- (6) Journal de L'ASS. DENT. CAN. Octobre 1957. p. 609.
- (7) Practice Administration. Mann and Eastlick 1955. p. 34-200
- (8) Dentistry for Children, Brauer 1952. p. 3
- (9) Thémis (revue juridique) article de Albert Mayrand p. 19
- (10) Règlements du Collège des Chirurgiens Dentistes de la Province de Québec. p. 21-23
- (11) Loi concernant le Collège des Chirurgiens Dentistes de la Province de Québec. p. 20-24

Nouvelles de l'Association

L'Université du Manitoba est prête à recevoir 30 étudiants

On est à imprimer le premier prospectus de la faculté dentaire de l'Université du Manitoba.

L'inscription de la première promotion en art dentaire se fera le 5 et le 6 septembre 1958. Le doyen J. W. Neilson a fait connaître quelques nominations à la nouvelle faculté dentaire, entre autres, le Dr George A. Brass, actuellement en Alberta, qui sera professeur de dentistrie opératoire.

Dès 1896, comme l'attestent les archives de la Société dentaire du Manitoba, des démarches avaient été faites pour établir l'enseignement dentaire à l'Université du Manitoba. Plusieurs tentatives dans le même sens furent réalisées dans la suite, mais sans résultat concret jusqu'en 1956. C'est alors que le Gouvernement Provincial demandait au Dr K. J. Paynter de préparer une étude sur l'établissement d'une école dentaire au Manitoba.

Au début de 1957, le gouvernement alloua les fonds nécessaires à la formation et au maintien d'une école dentaire appartenant à l'Université du Manitoba. L'été dernier, le Dr Neilson fut nommé premier doyen et des plans furent préparés pour la construction d'une école dentaire qui serait située près du Collège de Médecine et de l'Hôpital Général de Winnipeg.

Cette année, un maximum de trente élèves seront reçus. Les cours seront donnés au Collège de Médecine jusqu'à ce que la nouvelle école dentaire soit terminée. On espère qu'elle ouvrira ses portes en septembre 1959.

Notes sur l'art dentaire au Danemark

Population: 4,500,000.

Nombre de dentistes: 2,300 (30% sont des femmes).

Proportion: 1/1906.

Explication

Le programme de santé du Danemark, comme en plusieurs autres pays, repose sur des sociétés d'assurance-santé qui ont une longue histoire, puisqu'elles furent créées vers le milieu du 19^e siècle. Ces sociétés sont connues sous le nom de "Sociétés de bénéfices en maladie". Au début, elles étaient formées de volontaires. Aujourd'hui, le nombre de ces sociétés se chiffre à près de 1975 au Danemark. Tous les membres d'une profession ou d'un métier peuvent se grouper pour participer à ces fonds de maladie. (Les employés d'un magasin de chaussure, par exemple, auront leur propre fonds).

Dès 1891, le Parlement du Danemark vota les lois accordant l'aide de l'Etat à ces Sociétés. En 1933, une loi d'assurance-santé nationale était votée pour les réglementer et les régir. Tous les sujets âgés de 21 ans sont légalement tenus de s'inscrire à l'une de ces sociétés, en qualité de membre actif ou passif. L'enrôlement obligatoire diminue légèrement le coût de la prime annuelle mais ne donne pas droit aux bénéfices. Les bénéfices doivent être en accord avec les règlements émis par le gouvernement; ils peuvent varier d'une société à l'autre. Tout citoyen danois doit faire partie, au moins passivement, d'une Société de Bénéfices en maladie. Pour avoir part aux bénéfices

ces, il doit en devenir membre actif et payer une cotisation plus élevée.

Les Sociétés reçoivent de fortes subventions de la part du gouvernement. En 1957, les cotisations des membres fournissaient environ 20% des coûts tandis que le gouvernement en défrayait les 80%, au moyen de subsides provenant de l'impôt sur le revenu.

Service dentaire public

Le plan danois pour les services dentaires est très compliqué, étant donné le grand nombre de sociétés qui administrent les fonds de maladie. Les sociétés doivent se soumettre à des lois spéciales du gouvernement, mais les bénéfices peuvent varier d'une société à l'autre, et particulièrement ceux qui viennent des services dentaires. Cette différence dans les bénéfices peut s'effectuer tant sur les simples extractions que sur les soins dentaires plus complets de conservation (obturations en plastique seulement). Aucune société ne peut faire de bénéfices sur les restaurations en or ou sur les prothèses. Les enfants au-dessous de 18 ans ne sont pas traités par les sociétés mais reçoivent leurs traitements du service dentaire scolaire. En principe, les enfants d'âge scolaire reçoivent les soins dentaires gratuitement, mais il paraît que les dentistes ne sont pas en nombre suffisant dans les écoles. Le reste de la population reçoit les soins dentaires à titre de membre d'un Société de Bénéfices en maladie.

Les soins compris dans la catégorie "bénéfices" de même que ceux qui en sont exclus se donnent chez le dentiste, d'une manière privée, et le patient paie directement au dentiste les honoraires des soins exclus. Tout nouveau diplômé doit pratiquer au moins deux ans comme assistant d'un autre dentiste avant de recevoir une licence qui lui donne droit de travailler à son propre compte. Comme résultat pratique, le nouveau diplômé prodigue la grande majorité des soins sous la catégorie "bénéfices", tandis que le propriétaire du bureau exécute les soins qui échappent à cette catégorie. Tous les services dentaires se donnent dans les bureaux privés des dentistes. A un certain moment, quelques Sociétés de Bénéfices formèrent des cliniques, mais elles disparurent par suite de l'opposition de l'Association dentaire. Les honoraires payés au dentiste font l'objet d'une liste d'honoraires fixes.

En plus de ces plans pour "Fond de maladie", le gouvernement pourvoit aux services dentaires dans les institutions de bienfaisance. Chaque communauté institue un ser-

vice dentaire scolaire. Environ un tiers des dentistes employés dans ces services travaillent à temps complet. Mais un gros pourcentage de ceux qui y travaillent sont des femmes. Des soins dentaires complets sont fournis aux enfants, sauf pour ce qui a trait à l'orthodontie, dont le développement s'effectue graduellement. Jusqu'en 1956, les soins dentaires aux écoliers se donnaient surtout dans les cabinets privés. La profession exigea alors une plus forte rémunération. La réaction du gouvernement fut de créer des emplois réguliers et rémunérés à cet effet. Dans les institutions de bienfaisance et dans les services scolaires, le salaire est de 24,000 à 27,000 couronnes* par année. On rapporte que le revenu moyen en pratique privée varie entre 40,000 et 50,000 couronnes par année; c'est pourquoi, il est si difficile d'obtenir des dentistes pour le service dentaire du gouvernement.

Personnel auxiliaire

Des cours du soir se donnent dans des écoles professionnelles pour la formation des techniciens dentaires. Durant le jour, les élèves travaillent dans des laboratoires ou chez un dentiste (bien peu dans ce dernier cas).

Le cours est de quatre ans durant lesquels l'étudiant est soumis à des examens. L'on envisage présentement la possibilité de rendre obligatoire une année complète d'études. Durant les 150 dernières années, les techniciens dentaires du Danemark avaient le droit de prendre les empreintes. Une commission est chargée actuellement d'étudier la question des techniciens dentaires, et l'on croit généralement que cette pratique sera abolie.

Il n'y a pas au Danemark de cours d'entraînement spécial pour les assistantes dentaires et il n'y a pas d'hygiénistes dentaires.

Personnel dentaire

Comme en d'autres pays, notamment ceux où l'on a établi des plans de services dentaires, le Danemark manque de personnel dentaire. Des projets pour augmenter les facilités d'enseignement seront d'un grand secours pour enrayer cette pénurie. Cependant on discute beaucoup le fait d'un si grand nombre d'étudiantes en art dentaire. Les statistiques montrent que les écoles ont enregistré jusqu'ici deux élèves féminines pour trois masculins et cependant la proportion des femmes-dentistes qui pratiquent, soit à plein ou à demi-temps, n'a jamais dé-

*En 1957, un dollar équivalait à 7 couronnes.

passé 30%. Cet état de choses est considéré comme une perte de temps et un gaspillage d'enseignement.

Les études dentaires sont populaires chez des jeunes filles et, lorsqu'on a voulu réduire le nombre d'admissions féminines à ces études, on a assisté à une rébellion de leur part.

Enseignement dentaire

Le Collège dentaire Royal de Copenhague est la seule école dentaire du Danemark. Il fut construit en 1939-41 et peut recevoir 100 élèves par classe. Le Collège est une institution du gouvernement (Ecole d'Etat) sous la dépendance du Ministre de l'Education. La direction de l'Ecole dentaire est assumée par un Recteur (doyen) chargé de l'enseignement et de l'administration. Le Recteur est élu par les membres de la Faculté pour une période de cinq ans. Ce choix est soumis au gouvernement et la nomination est acceptée par le Roi, ce qui donne un certain prestige à la situation. Le mandat peut être renouvelé pour une autre période de cinq ans, mais on estime qu'un même candidat ne peut servir plus que 10 ans à ce poste.

Le titre de doyen n'a pas la même signification que sur notre continent. Le doyen est toujours chef d'un département et continue dans ses fonctions même après sa nomination. En fait, l'administration est confiée plus particulièrement au Registraire de l'Ecole, qui a reçu un entraînement de plusieurs années—probablement au Ministère de l'Education—avant d'être nommé à ce poste par le Ministre. Les membres du personnel de l'Ecole sont des employés civils payés par le gouvernement.

L'Ecole dentaire est située sur le nouveau campus de l'Université. La politique de l'Université de Copenhague a toujours été de ne pas étendre ses cadres au-delà des 5 facultés traditionnelles qui sont la théologie, le droit, la médecine, les arts et les sciences. Les Ecoles pour l'art dentaire, la pharmacie, la médecine vétérinaire, l'architecture, etc., sont connues au Danemark sous le nom d'Ecoles supérieures, i.e. conférant un enseignement supérieur. Cependant, l'on croit percevoir un rapprochement de plus en plus évident entre l'Université et l'Ecole dentaire.

L'édifice actuel de l'Ecole est en bon état mais trop petit; les équipements sont au point mais l'espace pour les contenir trop restreint. On étudie des plans pour ajouter une aile en 1958, ce qui doublerait la grandeur de l'édifice. L'extension terminée, la capacité des

classes augmentera de 100 à 125 élèves. On envisage aussi la construction d'une nouvelle Ecole à Jutland, dont la capacité serait de 75 étudiants par classe. Le total des dentistes gradués serait ainsi de 200 par année au Danemark.

Les études universitaires au Danemark sont gratuites mais les étudiants des Ecoles dentaires doivent payer 10% du coût d'entretien. Ce qui équivaut environ à 400 couronnes par année pour chaque étudiant. Les instruments employés à l'école sont la propriété de l'Etat. Ils sont prêtés à l'étudiant au taux de 300 couronnes par année. L'étudiant doit donc déboursier en tout 700 couronnes par année (soit environ \$100.00 par année). On prévoit que les frais de scolarité seront bientôt éliminés.

Cours pré-dentaire

Les cours en dentisterie et en médecine sont populaires auprès des jeunes des deux sexes au Danemark. Les demandes d'admission au cours pré-dentaire sont environ de 300 par année. De ce nombre, 200 étudiants sont acceptés, parmi ceux qui ont les meilleurs résultats aux examens d'entrée. La durée de ce cours est d'un an. Les exigences pour l'admission sont les mêmes qu'à l'Université de Copenhague. Les candidats doivent avoir au moins 19 ans et peuvent se qualifier de deux manières: soit avoir obtenu de bons résultats aux examens de leur dernière année de cours, soit passer avec succès un examen spécial en physique, chimie, biologie et physiologie. Les principaux sujets d'étude au cours pré-dentaire sont: l'Anatomie (Ostéologie, Cytologie et Histologie générale), la Physiologie, la Chimie générale et organique, l'Anatomie dentaire et la technologie dentaire générale. L'admission aux cours dentaires se fait d'après les résultats aux examens de l'année pré-dentaire. Habituellement, 100 étudiants du pré-dentaire ont accès aux études dentaires chaque année, et cela constitue la capacité de l'Ecole. L'année pré-dentaire représente en fait une année de sélection.

Programme d'études dentaires

L'année académique se divise en deux périodes de 16 semaines chacune. L'Ecole est fermée durant juillet et août. Quiconque veut obtenir un diplôme de chirurgien dentiste doit avoir suivi en entier le cours de quatre ans et passé avec succès les quatre examens de fin d'année, qui ont lieu en juin ordinairement.

Le programme d'études est le suivant:

	Cours	Travaux de Laboratoire ou Démonstrations Cliniques	Cliniques Pratiques	Seminares	Total
1^{ère} année					
Anatomie, Histologie.....	96	30		96	222
Chimie organique et Biochimie.....	48	42		48	138
Technologie dentaire.....	96	384			480
	240	456		144	840
2^{ème} année					
Physiologie de la nutrition.....	64				64
Pathologie et Bactériologie.....	96	16			112
Anatomie pathologique et Histopathologie.....	64	16			80
Principes d'Odontologie clinique et Diagnostic buccal.....	32	35	35		102
Prothèse.....	64	64	315		443
Pathologie dentaire et Dentisterie opératoire.....	16	35	262		313
	336	166	612		1114
3^{ème} année					
Pharmacologie.....	48				48
Radiologie.....	32		6		38
Chirurgie générale.....	64				64
Principes d'Odontologie clinique et Diagnostic buccal.....			35		35
Anthropologie et Anatomie comparative.....	16				16
Chirurgie buccale et Anesthésie.....	32		64		96
Orthodontie.....	32		128		160
Prothèse.....	64	64	288		416
Pathologie dentaire et Dentisterie opératoire.....	96	64	288		488
	384	128	809		1321
4^{ème} année					
Radiologie.....	32		6		6
Orthodontie.....	32		192		224
Chirurgie buccale et maxillaire (avec entraînement sur les patients du Département).....	32	32	192		256
Prothèse.....	64	64	336		464
Pathologie dentaire et Dentisterie opératoire.....	32	64	384		480
	160	160	1110		1430

TOTAL APPROXIMATIF DES HEURES DE COURS:

Cours pré-dentaire.....	647 heures
Cours dentaire.....	4705 heures
Total.....	5352 heures

Conformément à une loi du 25 février 1916, régissant la pratique de l'art dentaire, les nouveaux diplômés doivent travailler, soit avec un dentiste qualifié, soit dans une clinique municipale ou de l'Etat, pour une période d'au moins deux ans, avant de pouvoir le faire à leur propre compte. Le titre "Tandlaege" est accordé par la loi aux seules personnes qui ont le droit de pratiquer.

Les membres du personnel qui travaillent à plein-temps sont au nombre de 14 alors que le personnel complet compte 170 personnes. Les mêmes professeurs enseignent les matières de base aux étudiants de médecine et de chirurgie dentaire.

Le degré supérieur de "Docteur en Odontologie" est accordé moyennant présentation d'une thèse sur des travaux de recherche avancés. Les personnes dotées de ce titre sont acceptées pour donner des cours au Collège dentaire Royal.

Commentaires

1. Un point intéressant du programme d'assurance-santé au Danemark est qu'on y trouve beaucoup de variété. Il y a place pour tant de diversité au point de vue "administration" comme au point de vue "bénéfices".

2. Un autre fait est intéressant, celui du pourcentage élevé des femmes au sein du personnel dentaire. En effet, tous les pays scandinaves ont un quota comparativement élevé de femmes dentistes. La popularité de cette carrière chez les filles est remarquable. On peut sans doute expliquer un tel état de choses par le manque de dentistes.

3. L'Ecole dentaire de Copenhague est une maison d'enseignement très bien administrée. L'étude du programme fait voir une différence marquée avec les cours qui se donnent dans les universités canadiennes.

4. Comme en d'autres pays déjà bien socialisés, les taxes au Danemark doivent être élevées afin de soutenir les bénéfices pour la sécurité sociale.

Création d'une conférence en commémoration du Dr D. Prescott Mowry

Il y a trois ans, la mort du Dr D. Prescott Mowry, doyen de la faculté dentaire de l'Université McGill, fut vivement ressentie par les membres de la profession dentaire de Montréal, ainsi que par leurs confrères en périodontie et en éducation dentaire.

Desireuse de rendre hommage à sa mémoire et de perpétuer le souvenir de ses grandes idées, la Société dentaire Mont-Royal a décidé d'instituer une conférence destinée à le commémorer. Tous les dentistes, ainsi que les professeurs en art dentaire, de Montréal et des environs, y sont invités.

Le comité d'organisation a donc le plaisir d'annoncer que la première conférence a eu lieu lundi, le 14 avril 1958, à 8 heures du soir, à l'amphithéâtre de l'Hôpital Général de Montréal. On a invité comme conféren-

cier le Dr. B. O. A. Thomas, B.A., D.D.S., M.S., Ph.D., clinicien et professeur en périodontie, du Collège des Médecins et Chirurgiens de San Francisco, Californie. Il a choisi comme sujet de causerie: "Occlusion and Periodontal Disease".

Avant d'accéder à son dernier poste, le docteur Thomas était professeur à l'Université Columbia et à l'Université de Washington. Il travaille actuellement en périodontie à Palo Alto, Californie; il est l'auteur de plusieurs articles et a apporté sa contribution à quatre manuels sur la dentisterie. Enfin, c'est un diplomate et c'est à lui que revient la direction du Bureau américain de Périodontie.

Tous les membres de la profession dentaire qui y sont intéressés ont été cordialement invités à cette conférence.

Les techniciens de deux provinces soumettent un bill

En Colombie britannique et en Alberta, les techniciens dentaires ont proposé des bills à la Législature.

Dans la Colombie britannique, le bill no 45 stipule que les techniciens dentaires auraient le droit de "confectionner, réaliser, construire, fournir, mettre à la disposition, modifier et réparer des prothèses dentaires, et, dans ce but, de transiger directement avec la personne qui porte ou, devra porter ces prothèses." Ce projet de loi est présenté par le gouvernement et sans avis au préalable. La seule connaissance qu'en ont prise les députés a été au cours de la première lecture. Immédiatement, la dentisterie de Colombie britannique a entrepris une vigoureuse campagne contre le bill. A la deuxième lecture, les mots "et, dans ce but, de transiger directement avec la personne qui porte ou devra porter ces prothèses" ont été retranchés et d'autres amendements mineurs ont été apportés. Le bill a subi sa troisième lecture et a doté les techniciens du droit d'instituer une société qui aura le privilège d'enregistrer ses membres et de leur octroyer des licences.

En Alberta, le bill présenté demande d'incorporer sous une loi spéciale la Société des Denturistes publics. Le vice-président de la Société a déclaré que ses sociétaires espèrent que le bill sera présenté comme une mesure publique, du moins comme un bill privé. Le projet de loi donnerait à la Société le droit d'enregistrer et de donner des certificats à ses membres, et d'organiser un programme d'apprentissage.

Le bill a pour but d'accorder de plus grands privilèges que ceux actuellement en vigueur dans la Loi de la Santé publique. Ce qui donnerait au technicien d'Alberta le droit de confectionner des prothèses directement pour le public à condition qu'il soit associé à un dentiste suivant certaines conditions.

En Marge de l'Anesthésie

par A. PINOCHE

Après une injection à l'épine de Spix, lorsque le patient tient à vous informer des progrès de l'insensibilisation, il vous dit: "Je *sens* la langue qui fourmille, la lèvre qui se refroidit et qui enfle; je *sens* que ça s'endort". Il analyse, sans le savoir, l'envers psychologique de l'anesthésie, un envers qui est peut-être l'endroit.

C'est que, contrairement à son étymologie, l'anesthésie crée des sensations nouvelles d'autant plus impressionnantes pour le sujet qu'elles sont inhabituelles. Conséquences de l'injection, elles contribuent peut-être à en assooir l'efficacité.

Notre capacité de sentir est en effet limitée; une sensation, ou même un sentiment trop intense, finit par accaparer toute la réceptivité du moi jusqu'à la perte de connaissance et par supplanter, au moins, les autres sensations. Voulant éteindre un début d'incendie, je n'ai pas senti les brûlures. A intensité semblable, une sensation inaccoutumée refoule les autres.

La réversion utilise d'ailleurs cette auto-limitation de nos capacités de sentir; j'obtiens parfois une sédation de certaines douleurs d'origine dentaire par une onction externe de la joue avec un liniment très irritant à l'usage des sportifs. Il semble d'ailleurs que la sensibilité proprement dite se double d'une sensibilité obscure de chaque groupe cellulaire. La section d'un nerf ne détruit pas complètement la douleur et, quand on en accuse par principe les filets sympathiques, on risque de porter plainte contre inconnu.

L'anesthésie peut d'ailleurs s'utiliser contre certains réflexes aussi gênants que peu douloureux, comme l'hypersalivation provoquée parfois par les plus indolores de nos soins.

Deux comprimés de bellafoline, trois quarts d'heure d'avance, préviennent l'inondation, mais, quand ils ne suffisent pas ou que je suis pris de court, j'emploie le scuroforme en poudre à la dose d'une petite cuillerée à café que le patient laisse lentement (cinq minutes au moins) se dissiper dans la bouche.

Tout à fait inoffensif, le scuroforme a, sur d'autres anesthésiques de surface beaucoup plus puissants, l'avantage d'être insipide; l'amertume des autres produits dominerait la sensation "anesthésie" et exciterait la salivation qui, avec lui, diminue très considérablement.

Ce ne sont d'ailleurs pas les nécessités professionnelles qui m'ont inspiré cet emploi: yperité pendant la première guerre,

je suis assailli par des quintes de toux, plus irritantes encore pour l'entourage. La codéine agit trop lentement: vite, une cuillerée à café de scuroforme gardée dans la bouche jusqu'à disparition et la toux s'arrête en quelques secondes pour longtemps.

Par profession, nous luttons constamment contre la douleur ou plutôt contre les douleurs, car, entre elles, il y a peut-être plus qu'une différence d'intensité: j'ai subi des extractions sans anesthésie mais, avec de la volonté, cela se supporte; j'ai subi aussi des fraisages intempestifs, c'est insupportable. Aussi est-il plus facile d'insensibiliser pour une extraction que pour une pulpectomie, même avec une anesthésie régionale complétée pour le bas par une injection locale légère.

On ne représente d'ailleurs l'anesthésie à l'épine de Spix comme une section physiologique du nerf; l'observation présenterait peut-être une image différente; l'efficacité dépend aussi de la longueur du segment nerveux soumis à l'anesthésie (Cardot et Laugier: Nerfs et réflexes); l'influx ressemble à un ruisseau qui traverserait une lande sablonneuse; plus le trajet est long, plus le ruisseau s'épuise.

Pendant des années, en effet, j'ai employé à l'épine de Spix 2 cm³ de solution; presque toujours le patient disait: "l'extraction ne m'a pas fait mal"; mais, lorsque je recourais à l'emploi d'une langue de carpe, je remarquais une crispation du visage; il ne souffrait peut-être pas, mais manifestait tout au moins une appréhension, avant-garde de la douleur.

Depuis deux ans, j'emploie 4 cm³ de la même solution; or, les patients ne perçoivent généralement plus cette poussée; la sensation de dilatation est émoussée. On peut donc obtenir mieux — et sans danger — qu'une anesthésie moyenne.

Constataion analogue pour les dents supérieures; une injection de 2 cm³ est suffisante, mais quand il s'agit d'une dent fortement implantée, j'injecte 3 cm³; j'obtiens ainsi, avec une extension de la nappe anesthésique, une réduction de l'impression inquiétante d'ébranlement.

Il convient donc d'élargir notre conception du rôle de l'anesthésie. Il commence, comme pour la salivation, alors que n'apparaît pas encore la douleur; il s'étend aussi aux sensations plus inquiétantes que douloureuses que suscite la dilatation, un peu comme le spectre solaire que prolongent l'infra-rouge et l'ultra-violet.

L'Information dentaire, 12-6-58

UN ÉVÉNEMENT SENSATIONNEL . . .

IL FAUT Y ASSISTER!

ASSOCIATION DENTAIRE CANADIENNE

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DATE: 26 au 29 octobre

ENDROIT: LE PLUS RÉCENT HOTEL DU CANADA

"REINE ELIZABETH"

Réunion du Bureau des Gouverneurs: 22 au 25 octobre



REMERCIEMENTS

Le Comité d'organisation du Congrès remercie bien sincèrement le Montreal Dental Club pour avoir accepté d'unir ses effectifs à ceux du Congrès 1958. Le "Fall Clinic" n'aura donc pas lieu cette année.

De même, l'Association dentaire de la Province tiendra son assemblée annuelle en même temps que le Congrès de l'A.D.C. Le Comité d'organisation du Congrès national remercie les directeurs pour ce geste de coopération.

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Growth Changes of the Dental Arches— A Longitudinal Study*

COENRAAD F. A. MOORREES, D.D.S., F.I.C.D.***, Boston, Massachusetts, U.S.A.*

Longitudinal data make it possible to analyze growth and development of the individual, since each child is examined at regular intervals during the course of the study. By combining observations of all subjects the developmental pattern of the total group can be obtained on the basis of a chronologic, or biologic age scale. This group pattern serves in turn as a frame of reference when comparing growth changes of individual children.

Longitudinal material is also suitable to test the accuracy of predictions, by determining the degree of correlation of various features at an early and late age in the observation period. This last aspect

is of specific interest to the clinician who is often concerned with the prognosis of growth changes when contemplating treatment, especially in orthodontics.

The purpose of the present study was to measure the breadth, length, and circumference of the dental arches during the growth and developmental period of children and to use the findings in combination with data on tooth size for predicting the alignment of the permanent teeth.

*Presented at the Annual Convention of the Canadian Society of Dentistry for Children, Niagara Falls, Ontario; May 10, 1958.

**Chief, Orthodontic Department, Forsyth Dental Infirmary for Children, Boston, Mass.

MATERIAL AND METHODS

Serial dental casts of 184 North American White children were available for the present study. The largest part of this material (132 children) was collected by the Longitudinal Studies of Child Health and Development, directed by Dr. Harold C. Stuart and conducted in the Department of Maternal and Child Health of the School of Public Health, Harvard University (Stuart, *et al.*¹). In addition Dr. Richard C. Stucklen contributed longitudinal series of dental casts of 52 pupils from the Bayard public school in Wilmington, Delaware.

In both studies clinical examinations were conducted semiannually, but the impressions for the dental casts were taken only once a year, at a time closely coinciding with the birthday of each subject. In the group studied by Dr. Stuart and observed since birth, dental casts were gathered between 2 or 3 and 17 or 18 years of age. However, impressions were not taken in most instances between 12 and 16 years of age due to a lack of personnel during World War II and failure of the subjects to cooperate.

The school children studied by Dr. Stucklen were observed from 5 or 6 years until 16 or 18 years of age, and the continuity of the material was generally excellent.

Because of the differences in the ages at which dental casts were obtained, it was not possible to utilize the same sample of children at each chronologic age for a completely longitudinal analysis of growth changes in the dental arches. Moreover, data on arch breadth or arch length and circumference could not be obtained on each dental cast in all instances due to loss or exfoliation of deciduous teeth, incomplete eruption of permanent teeth, and dental caries.

The findings reported in this paper are based on observations of children having essentially a parabolic shape of the dental arch and the teeth needed as landmarks in normal anatomical position at the final examination. When these conditions were

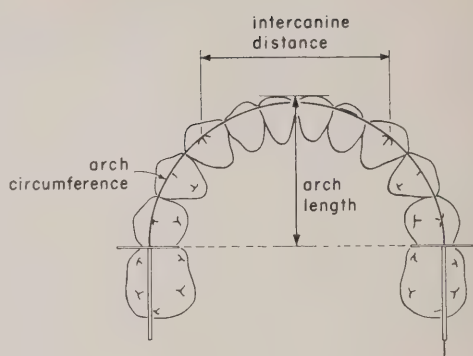


FIGURE 1
Method of measuring arch length, the intercanine distance, and arch circumference.

satisfied, all previous observations were used for the analysis regardless of the status of the dentition at earlier ages.

Arch length was obtained by measuring the distance between a line tangent to the labial surfaces of the central incisors and a line connecting the most dorsal points on the distal surfaces of the deciduous second molars or the second premolars.

Arch breadth was obtained by measuring the distance between the crown tips of the deciduous or permanent canines.

Arch circumference was obtained by measuring the length of the curved line passing over the buccal cusps or the incisal edges of the teeth from the distal surface of the deciduous left second molar or second premolar to its antimer.

In the permanent maxillary and mandibular dentition, length and circumference are obtained in that segment of the dental arch which corresponds to the arch formed by the deciduous teeth.

The three dimensions of the dental arches studied are shown in figure 1. Additional information regarding the methodology is given in a comprehensive report on these studies (Moorrees²).

All measurements were made with a sliding caliper equipped with a vernier scale, to obtain readings of 0.1 mm. The standard deviations of measurements

made independently by two investigators on 30 dental casts are 0.21 mm for arch length, 0.13 mm for the intercanine distance, and 0.25 mm for arch circumference.

FINDINGS

Arch Breadth and Length—The size of the dental arches differs markedly among individuals at all ages, as may be expected when the biologic variations are taken into consideration that are known to occur in the absolute size of man's features. Average or mean findings are, nevertheless, useful as measures of central tendency for descriptive purpose. A smoothed curve drawn through the means furnishes a generalization of age changes in the dental arches, and it serves also for reference purpose when comparing developmental patterns in individuals.

The changes in the arch dimensions of the average child can be reviewed for the purpose of convenience by dividing the

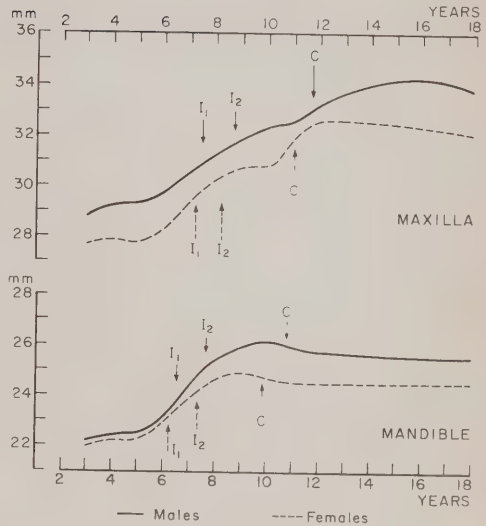


FIGURE 3

The average distances between the maxillary and mandibular canines at various ages. The arrows refer to the mean ages of emergence of the permanent teeth (Hurme⁴).

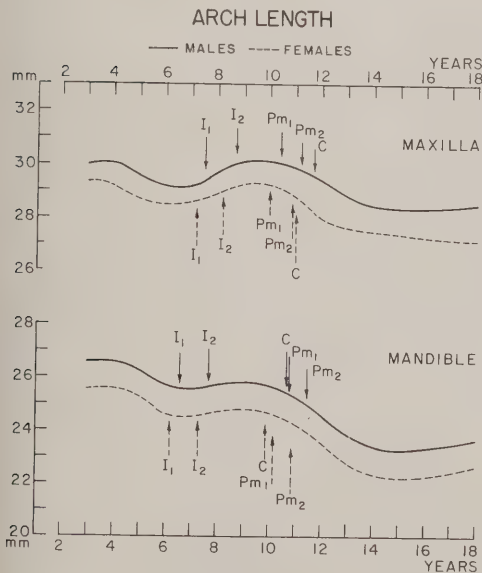


FIGURE 2

The average maxillary and mandibular arch lengths at various ages. The arrows refer to the mean ages of emergence of the permanent teeth (Hurme⁴).

observation period in four parts, namely (1) the deciduous dentition from 3 to 5 years of age; (2) the mixed dentition, during the incisor transition, from 5 to 10 years; (3) the mixed dentition, during the premolar and canine transition, from 10 to 14 years; and (4) the permanent dentition from 14 to 18 years of age.

The changes in arch length and the intercanine distance between 3 and 5 years of age, in both the maxillary and mandibular dentition, are small and compensate each other (figs. 2 and 3). The intercanine distance increases, probably as a termination of an increment phase of arch breadth which originated before the age of 3 years. Arch length decreases following mesial drift of the deciduous molars with closure of the interdental spaces between the deciduous molars and canines.

Between 5 and 10 years of age, when the permanent maxillary and mandibular central and lateral incisors emerge, the

intercanine distance increases approximately 3 mm. The decrease in arch length, beginning at 4 years of age, continues until the age of 6. Thereafter arch length increases, especially in the maxilla (1.0 mm), as a result of the greater labial inclination of the permanent incisors compared to that of their deciduous predecessors.

Beginning at 10 years of age and continuing until 14 years, the arch length decreases once more (1.5 mm in the maxilla and 2.5 mm in the mandible), primarily because the mesiodistal crown diameters of the premolars are generally smaller than that of their deciduous predecessors. When a cusp to cusp relationship of the permanent first molars still persists, it is changed to neutroclusion following the shedding of the deciduous molars.

The maxillary intercanine distance increases during a third increment phase which starts shortly after 10 years of age, adding approximately 2 mm to this distance. In the mandible, the intercanine distance decreases slightly between 10 and 14 years of age.

The changes in arch length and the intercanine distance are small after 14 years of age and according to the mean curves, a minimal increase occurs in length, while a slight decrease is observed in the maxillary intercanine distance.

Inspection of figure 3 also shows that the changes in the intercanine distance differ for the maxillary and mandibular dentitions, since the increase in this distance occurs during three phases in the maxilla and only two phases in the mandible.

The mean length and breadth of the dental arches are smaller in the females at all ages, but the total increments in these arch dimensions are similar in both sexes. In general, but especially for the intercanine distance, each growth phase is of shorter duration and greater velocity in the females than in the males.

Inasmuch as the changes in arch breadth and length are associated with

the emergence of the permanent incisors, canines, and premolars (figs. 2 and 3), the timing of these changes can be expected to vary among children whose development is characterized by early or late maturation.

The range of individual variation in the absolute intercanine distance and arch length are large (Moorrees²), and marked differences occur also in the age changes of these two dimensions. For instance, the decrease in arch length between 4 and 6 years of age may be considerably greater in children having marked interdental spaces between their deciduous molars and canines, than in those having minimal spacing. Yet presence of interdental spacing does not imply that mesial drift of the deciduous molars and shortening of the arch length is observed in all instances, or to the full extent of the available space.

Loss of the original mesiodistal crown diameters of the deciduous teeth, as a result of dental caries, may lead to a proportionately great decrease in arch length. On the other hand, a considerably larger than average gain in arch length can be observed when the permanent incisors erupt in labioversion compared to the position of the deciduous incisors.

The variation in the total increase of the intercanine distance between 3 and 18 years of age is also marked among the children studied, due to differences in facial and alveolar growth or changes in the inclination of the canines.

To obtain a measure of the extent of individual variation in the *annual* increments of the intercanine distance and arch length, the changes were analyzed which occurred from year to year, in children for which data were available at two successive ages. The average annual increments served to confirm the reliability of the mean growth trends, derived from the entire group.

Since all observations were obtained from individuals with anatomically excellent alignment of the teeth and parabolic shape of the dental arches, the plus

and minus two standard deviation limits were used to indicate the range of individual variation. These limits include theoretically 95 per cent of the observations if it is assumed that the actual variations encountered in the data follow the normal distribution curve.

As shown in figure 4, the greatest individual differences in the annual increments of arch length occur generally at two periods, which coincide with the mean ages of emergence of the permanent central incisors and second premolars. However, the changes in the range of individual variation follow an erratic pattern in the maxillary dentition of females after 8 years of age. In the males, the second increase in variability does not occur.

Two peaks can likewise be observed in the extent of individual variation of the annual increments in both the maxillary and the mandibular intercanine distances (fig. 5). The two periods of greatest variation occur around the mean ages of emergence of the permanent lateral incisors and canines.

Moreover, it must be pointed out that some children show an increase and

others a decrease in arch length or arch breadth, irrespective of the direction or amount of the mean change at each age level (figs. 4 and 5).

Arch Circumference — The result of changes in the length of the dental arches and in their breadth, measured by the distances between antimeres but limited in this paper to the intercanine distances, are reflected in the increments in the circumference of the dental arches (dm_2 ; $Pm_2 - Pm_2$).

Data on arch circumference were obtained only at 5 and 18 years of age, and the findings are presented in table 1. The mean increase in the circumference of the maxillary dental arch between 5 and 18 years of age is very small (+1.3 mm in males and +0.5 mm in females). In the mandible, the arch circumference is 3.4 and 4.5 mm smaller in the average male and female, respectively, at 18 years than at 5 years of age.

The range of individual variation in the increments of arch circumference in both maxilla and mandible of both sexes is marked, as shown by the two standard deviation limits in figure 6. Actually the circumference of the dental arches may

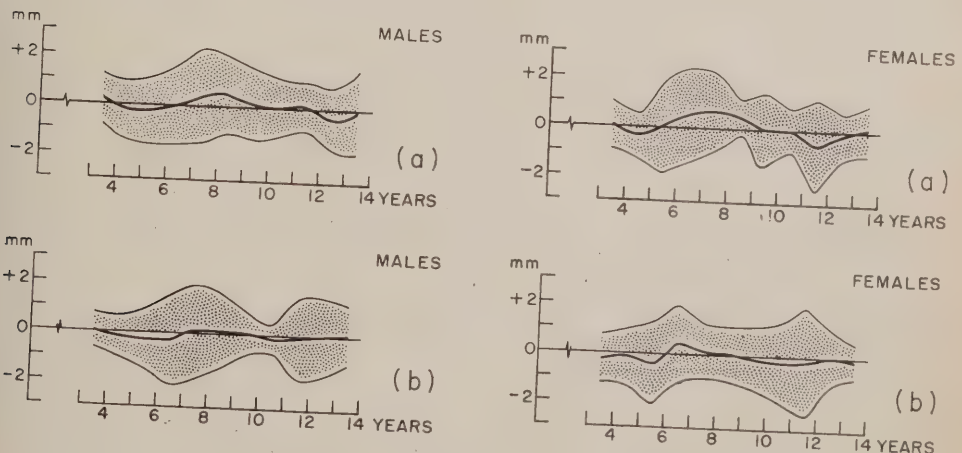


FIGURE 4
The annual increments (mean $\pm$ 2 standard deviations) in the maxillary (a) and the mandibular (b) arch lengths.

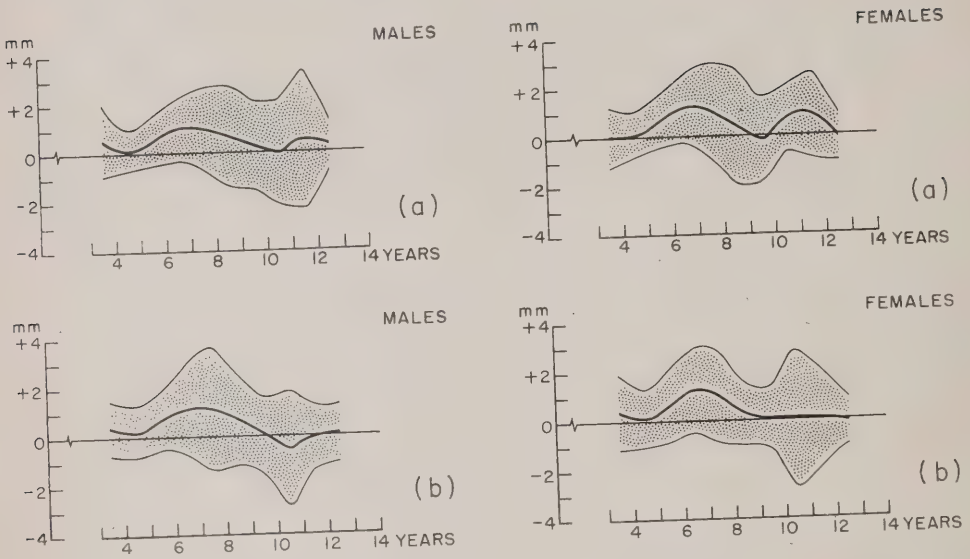


FIGURE 5

The annual increments (mean ± 2 standard deviations) in the distances between the maxillary (a) and the mandibular (b) canines.

increase or decrease considerably in the maxillary dentition of both males and females. In the mandible, the arch circumference can increase slightly or greatly diminish, in both sexes, between 5 and 18 years of age.

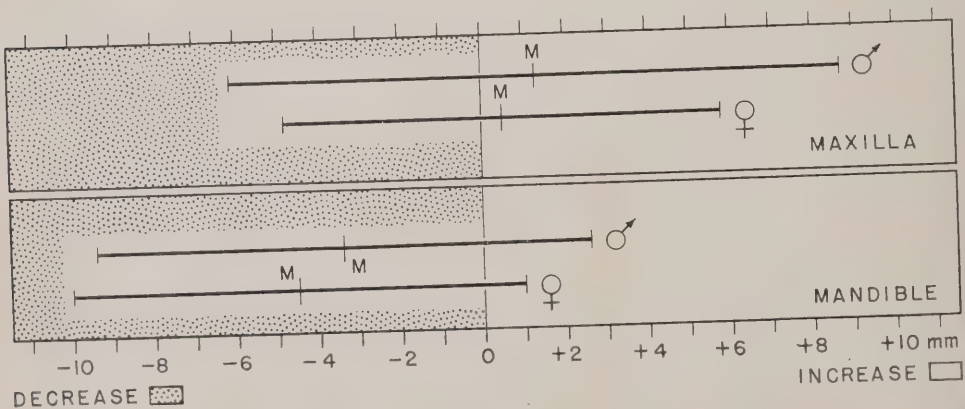


FIGURE 6

The increments (mean ± 2 standard deviations) in the circumference of the maxillary and mandibular dental arches between 5 and 18 years of age.

TABLE 1. Dental arch circumference of children at ages 5 and 18 years

Age	Sex	Mean (mm)	S.E. (mm) —	S.D. (mm)	Range (mm)	Number
MAXILLA						
5	♂	79.25	0.57	2.81	72.7 - 84.7	25
5	♀	74.69	0.66	3.51	68.7 - 83.0	29
18	♂	80.57	1.06	5.22	67.3 - 93.6	25
18	♀	75.22	0.48	2.55	70.2 - 81.1	29
MANDIBLE						
5	♂	70.98	0.66	3.45	63.7 - 77.1	28
5	♀	68.66	0.44	2.26	63.7 - 73.3	28
18	♂	67.59	0.65	3.39	60.5 - 75.5	28
18	♀	64.18	0.53	2.75	60.1 - 69.8	28

CLINICAL CONSIDERATIONS

To satisfy the need for orthodontics in the contemporary child population, consideration should be given to preventive therapeutic measures. Clinical results indicate that this can be done successfully in many instances, but it is known that the timing of these measures depends on dental development. Also, future growth changes must be taken into consideration in determining the indication for preventive treatment.

Since the findings of this study show that the developmental pattern of the dentition differs markedly among individuals, the clinical diagnosis can be facilitated in many instances by assessing the past growth pattern characteristic of the individual patient. Therefore, longitudinal records should be obtained as a routine procedure in the paedodontic practice, consisting of dental casts and cephalometric radiographs for the study of dental and facial growth, and lateral jaw, or intra-oral radiographs for determining dental maturation. Whenever indicated, bone age can be assessed also from wrist and hand radiographs.

The most suitable developmental levels for observation are: (1) just before the permanent mandibular central incisors emerge, (2) just after the emergence of the permanent maxillary central incisors, and (3) after the emergence of the permanent maxillary lateral incisors.

PREDICTING THE ALIGNMENT OF THE PERMANENT TEETH

The circumference of the dental arch in each jaw at 5 years of age equals the sum of the mesiodistal crown diameters of the deciduous teeth plus the amount of interdental spacing (or minus crowding). Ideally, the arch circumference at 18 years of age should equal the combined mesiodistal crown diameters of the permanent teeth to enable normal tooth alignment. Whether this optimal condition is reached in individual instances depends on the size of the permanent teeth and on the changes in arch circumference, *in casu* the increase in arch breadth and the decrease in arch length. These factors must be taken into consideration when attempting to make a prognosis of dental development.

Tooth Size—The maxillary permanent teeth generally exceed the deciduous teeth in their combined mesiodistal crown diameters (+5.22 mm in the average male, and +3.59 mm in the female). However, the mean combined mesiodistal crown diameters of the permanent mandibular teeth does not differ greatly from that of the deciduous teeth (+0.77 mm in males, and -0.17 mm in females; Moorrees, *et al.*³).

The correlation coefficients for the combined mesiodistal crown diameters of the deciduous teeth and their permanent successors, in the maxilla and mandible

of males and females, range between $+0.49 \pm 0.10$ and $+0.69 \pm 0.07$. These findings indicate that in individual instances a great deal of variation can be expected in the size of the permanent teeth replacing deciduous teeth of a given mesiodistal crown diameter. Consequently, the prediction of the size of the permanent teeth from that of the deciduous teeth is subject to large error if it is made by means of a regression equation.

Actually, however, the mesiodistal crown diameters of the permanent teeth can be estimated before their emergence by measuring this diameter in radiographs, while the size of the deciduous and permanent teeth that have already erupted can be obtained by measuring dental casts.

Thus, the relation between the size of the deciduous teeth and their permanent successors can be determined at an early age for specific tooth groups to approximate the space requirements for the permanent incisors and canines and to learn how much additional space, if any, becomes available after the shedding of the deciduous molars. Statistics on the mesiodistal crown diameters of these tooth groups are presented in table 2, including

standard deviations and ranges as measures of individual variation.

Relation between Tooth Size and Arch Circumference—For prognosis the percentage ratio should be computed also between the combined mesiodistal crown diameters of the permanent teeth (Pm_1 , Pm_2) and the arch circumference from the distal surface of the deciduous molar or premolar to its antimeres.

If the percentage ratio between tooth size and arch size differs only slightly from 100, observation rather than orthodontic treatment is indicated regardless of the existing status of tooth alignment. In addition, it may be desirable to prevent the normal mesial drift of the permanent first molars which generally occurs after the shedding of the deciduous molars, with a lingual arch or removable plate, as a means of preventing a decrease in arch length and arch circumference.

The prognosis for satisfactory alignment of the permanent teeth becomes doubtful when the ratio between tooth size and arch size deviates markedly from 100 especially when it exceeds 110 because of possible crowding of the teeth. In such instances, either continued observation in

TABLE 2. Mesiodistal crown diameters of tooth groups.

Teeth	Sex	Mean (mm)	S.E. (mm)	$\frac{M}{M}$	S.D. (mm)	Range (mm)	Number
MAXILLA							
Deciduous incisors and canines..	♂	37.31	0.24		1.79	33.2-44.0	57
	♀	36.44	0.22		1.78	33.4-41.1	63
Permanent incisors and canines..	♂	47.00	0.33		2.53	41.0-55.3	57
	♀	45.07	0.29		2.31	40.3-50.5	63
Deciduous molars.....	♂	32.29	0.19		1.51	28.8-35.8	61
	♀	31.60	0.24		1.85	28.6-35.1	59
Premolars.....	♂	27.86	0.16		1.24	22.6-30.5	61
	♀	26.85	0.20		1.51	21.9-30.0	59
MANDIBLE							
Deciduous incisors and canines..	♂	29.35	0.19		1.49	25.9-32.3	60
	♀	28.68	0.22		1.75	25.8-33.1	64
Permanent incisors and canines..	♂	36.70	0.22		1.69	33.0-40.3	60
	♀	35.12	0.24		1.93	29.9-39.0	64
Deciduous molars.....	♂	35.09	0.22		1.63	32.1-38.9	56
	♀	34.53	0.19		1.52	32.4-38.0	64
Premolars.....	♂	28.77	0.20		1.46	25.6-32.4	56
	♀	27.89	0.20		1.58	24.6-31.4	64

anticipation of favorable growth changes, or orthodontic treatment, may be considered.

Arch Size—The prediction of growth changes in the dental arches is probably the most baffling aspect of the clinical evaluation.

When longitudinal data are available, the past record may be of considerable value by revealing the beginning of a growth phase and warranting further observation to determine its velocity.

The group pattern of the changes in the intercanine distance and arch length may serve as a frame of reference to assess the developmental patterns of a particular individual. However, proper allowance must be made for differences in the timing of the changes in these arch dimensions and for differences in their absolute size.

Summary—Careful analysis and integration of all findings revealed by observation of children furnishes information which facilitates prognosis to a considerable extent in many instances and also helps to define more precisely the indication for orthodontic treatment of crowding of the teeth.

CONCLUSIONS

The findings of this study emphasize the importance of observing children longitudinally to determine the developmental pattern characteristic of each individual.

When observation is contemplated during the growth and developmental period, the examinations should be conducted according to a biologic time schedule instead of a chronologic one because the changes in the breadth and length of the dental arches are associated in a general way with the emergence of the permanent teeth.

On the basis of these findings it is suggested that a minimum of three dental casts should be obtained in the paedodontic practice, namely: (1) of the deciduous dentition before the permanent mandibu-

lar central incisors emerge; (2) of the transitional dentition after the emergence of the permanent maxillary central incisors; and (3) of the transitional dentition after the emergence of the permanent maxillary lateral incisors when crowding of the lateral incisors occurs most frequently in both jaws.

Cephalometric radiographs should also be obtained at these visits for an evaluation of the growth pattern of the face, especially when malocclusions of the Class II or III type prevail at the first examination.

Intra-oral or lateral jaw radiographs furnish additional information concerning the sequence of emergence and root formation of the permanent teeth for estimating dental maturation.

The routine longitudinal observation of patients enhances the possibility of predicting aberrations in growth and instituting appropriate interceptive procedures.

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REFERENCES

1. Stuart, H. C. and Staff 1939 Studies from the Center for Research in Child Health and Development, School of Public Health, Harvard University. Monographs of the Society for Research. Child Development, 4, serial No. 20, number 1.
2. Moorrees, C.F.A. 1959 The dentition of the growing child. Harvard University Press, Cambridge, Mass.
3. Moorrees, C.F.A., Selma Ø. Thomsen, Elli Jensen, and Peter Kai-Jen Yen 1957 Mesiodistal crown diameters of the deciduous and permanent teeth in individuals. J. Dent. Research, 36, 39-47.
4. Hurme, V. O. 1948 Standards of variation in the eruption of the first six permanent teeth. Child Develop., 19: 213-231.

An Evaluation of Proper Procedures in Oral Diagnosis and Their Bearing on Subsequent Treatment Planning.

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Second Prize Essay—War Memorial Award Competition

INTRODUCTION

The fundamental service of any healing profession is the diagnosis and planning of treatment. Failure in this service may endanger life or inflict other grave loss as well as augmenting and prolonging the course of the disease¹.

In order to evaluate the proper procedures in oral diagnosis and discuss their bearing on subsequent treatment planning, one must first decide what these proper procedures are. Once these procedures are defined, a discussion of their diagnostic value and relationship to treatment planning follows more logically.

This essay, being limited in length, must of necessity be concise. One could not hope to include all the information relative to this topic. Thus in this essay, I have outlined very briefly what I consider to be the proper procedures in oral diagnosis. With these procedures as the basis of the essay, there follows a short description of each procedure illustrating its diagnostic value and its relationship to treatment planning.

PROPER PROCEDURES IN ORAL DIAGNOSIS

Diagnosis is the art or act of distinguishing one disease process from another. It must be as broad as possible in scope and thoroughness and must be ap-

plied to the total personality of the patient.

Treatment planning is the arranging into correct sequence of the various phases of dental treatment required to regain or maintain oral health. A careful diagnosis and thorough understanding of the disease will lead the diagnostician to the correct treatment.

The dentist's responsibility for the health of his patient goes beyond the care of the teeth and adjacent tissues. He must concern himself with the entire oral cavity and its relation to the rest of the body. No structure or organ in the human body can be considered as an isolated, autonomous, physiological unit. They all play a role in body metabolism and all are related to the health and well-being of the individual.

The dentist of today has a greater responsibility in the field of oral diagnosis and must have a much wider horizon of diagnostic knowledge than in the past. He must give equal attention to the non-mechanical phase of dentistry and apply the basic principles of human biology and the fundamentals of general medicine to the practice of dentistry. Our aim should be the prevention of disorders in oral structures or the early treatment of incipient threats to their proper development, function and health².

To achieve this goal, more time and attention must be spent on precise, inclusive diagnosis and treatment planning. The proper diagnosis entails not only careful examination and observation, but also knowledge and an application of that knowledge in mature sound judgment. The opinion arrived at by this method is spoken of as a diagnosis although the diagnosis more properly refers to the process by which the condition is identified. With practice and the development of knowledge, perception, conciseness, and routine, the time required for a complete oral examination becomes greatly reduced.

Outlined below is a list of these proper procedures in oral diagnosis.

A. Patient History

1. General Information
2. Chief Complaint
3. History of Present Illness
4. Family History
5. History of Past Health
6. Personal History
7. Review of the Systems

B. Physical Examination

1. General Examination
2. Dental Examination
 - (a) Soft Tissues
 - (b) Gingival Tissues
 - (c) Teeth
3. Radiographic Study
4. Study Casts
5. Laboratory Procedures

C. Evaluation and analysis of collected information—Diagnosis.

PATIENT HISTORY

General Information

The general information includes name, address, age, height, weight, race, marital status, sex, occupation and telephone number of the patient, name of referrer, name and address of physician.

Such routine information is of diagnostic value. Age is important with respect to disease, prognosis and treatment. Caries is more common and progressive

up to twenty-five years of age. Young children are prone to childhood diseases such as herpetic gingivostomatitis, measles and mumps. Sarcoma generally affects the young and robust whereas carcinoma strikes the older, middle-aged individual. Height and weight give a good indication of health and rate of growth. Carcinoma of the lip and haemophilia occur more frequently in males while Plummer-Vinson syndrome and periapical osteofibrosis occur more frequently in females. The occupation may give a clue as to the aetiology of a condition as in the notched maxillary incisor of a hairdresser. Therefore by noting only the age, sex and occupation of the patient, one can bring certain diseases into focus and eliminate others.

The age and sex of a patient are important with respect to prognosis and treatment. Similarly, the occupation and the other listed factors may affect prognosis and treatment.

Chief Complaint

The chief complaint concerns the main symptoms or reasons for coming to a dentist, with their duration.

History of Present Illness

The history of the present illness is the complete story of the current illness or disorder from its onset to the present time, preferably in the patient's own words. The dentist should establish the time, nature and onset of the symptoms, new symptoms and previous treatment.

Family History

The family history concerns the health of parents and close relatives. It may uncover familial conditions such as haemophilia, diabetes mellitus, osteogenesis imperfecta, hereditary ectodermal dysplasia, cleft palate, supernumerary teeth, partial anodontia or prognathism.

History of Past Health

This history includes a chronological

survey of previous illnesses, operations or injuries including their outcome. Special emphasis should be placed on those diseases affecting oral structures and those which might have caused permanent or progressive changes such as hyperparathyroidism, dentinogenesis imperfecta, oral tumours, rheumatic fever, tuberculosis, anaemia or leukemia. The extent of this past history varies according to the signs and data acquired thus far.

Most practitioners realize the value of recording the chief complaint, history of the present illness, family history and history of past health. The chief complaint and history of the present illness, as in the case of trigeminal neuralgia, often leads directly to the correct diagnosis.

The family history and record of the past health very often provide the cardinal clue for diagnosis and successful treatment. A history of epilepsy would clarify the picture of hyperplastic gingiva due to dilantin therapy and would prevent a mistaken diagnosis and treatment. A young patient with unilateral swelling at the angle of the mandible, having no history of mumps, might indeed have mumps and not a dentoalveolar abscess. Patients who have had rheumatic fever or have epilepsy or diabetes mellitus require special attention and different kinds of treatment.

Thus we can see the value of these histories. They provide an impression of the patient's general health and may contribute information pertinent to the disease. Accurate diagnosis and successful therapy may well depend on this information.

Personal History

This history is a biographical outline of the patient and includes such information as place of birth, childhood circumstances, education, occupation, personal habits, financial or emotional problems, recreational and social activities. This

history is often combined with the past health history.

During the history taking, the dentist should appraise the patient as a whole. He should note stature, apparent age, complexion, posture, gait, expression, speech and the psychological and emotional make-up of the patient.

The value of a personal history may not be apparent at first glance. This information, however, may reveal habits and conditions which produce oral signs and symptoms. Many oral signs of disease are psychogenic and thus the dentist needs an understanding of the patient and his background. There is a strong relationship between the oral cavity and the psyche. Ugly deformities such as missing, malposed teeth, harelip and prognathism may contribute to serious personality changes. Under emotional stress, patients may develop habits such as bruxism, lip-biting and thumb-sucking. Other factors such as occupation, education, marital status, personal habits and hygiene also enter into the field of diagnosis and treatment. The dentist must understand these situations and make his diagnosis and treatment plan accordingly.

Review of the Systems

This review involves a very brief synopsis of function and symptoms of the various systems such as cardiovascular, nervous, respiratory, gastrointestinal, genitourinary, endocrine, eye, ear, nose and throat, blood, bones and joints as well as a general review of allergies, drugs and sensitivities.

Such a review is of great benefit in diagnosis. It provides a checklist by which the dentist can be certain that no critical step is omitted. In most cases the preceding histories will supply all the necessary data, but to be absolutely certain, each body system is investigated. Chera-skin and Langley⁸, illustrate the value of such information with respect to diagnosis and therapy in the following case.

On questioning, one learns that a pa-

tient is taking digitalis and another drug to produce excessive urination. This fact suggests the possibility of a mercurial diuretic, a drug used in conjunction with digitalis only in cases of severe cardiac disease. Thus this patient is a poor surgical and anaesthetic risk, with a short life expectancy. The treatment plan and prognosis are thereby influenced. Also since systemic mercury unites with hydrogen sulphide of diseased tissues to produce the typical mercuric sulphide line, frequent prophylaxes are indicated. Mercury is excreted in the saliva and is irritating; thus careful instruction in oral hygiene is also necessary.

Many dentists consider the formal history unnecessary⁵. The history of a patient may not always be indispensable in the diagnosis and successful treatment of an oral pathological condition but failure to obtain the patient's complete story may find one often neglecting an opportunity to recognize some other condition far more important than the one which prompted dental service.

A history gives the dentist a better patient insight and permits a more intelligent and efficient examination. With this information available, a case can be studied from every possible aspect and the primary and secondary aetiological factors determined. Also with the sound background of such a history, one may fit the present disorder into its proper perspective and at the same time detect associated conditions which alter significantly the prognosis and program of management.

PHYSICAL EXAMINATION OF THE PATIENT

In the procedures listed here, no attempt is made to describe the various steps, sequence or circuits. The proper techniques are many and varied. A description of them would exceed the limits of this essay.

It is very important, however, that the dentist establish a systematic routine

both in the history taking and physical examination of the patient. With such a routine an accurate oral diagnosis, prognosis and treatment is almost assured.

General Examination

A general inspection of the patient should commence at first sight of the patient and continue while the dentist takes the history. In a very few minutes an appraisal of stature, gait, posture, hands, complexion, facial symmetry and expression, speech and apparent age can be made. Although in most cases nothing specifically is gained by studying these features, such an appraisal may be of diagnostic significance with the rare case.

This gross appraisal gives the dentist a good indication of the patient's general health and may directly or indirectly relate to the diagnosis and treatment.

Before saying, "Open please," the dentist should examine the head and neck. Diseases such as acromegaly, leontiasis ossea, actinomycosis or even carcinoma may be noticed first by the dentist. The skin may show evidence of inflammation, edema, anaemia, purpura, cheilosis or ulceration. The cause of facial swelling may very well be a dental infection, trauma, or osteomyelitis. All of these conditions have some bearing on the diagnosis and treatment.

Discomfort in the temporo-mandibular joint or pain in the ear may be due to dental disorders such as overclosure, den-toalveolar abscess, dislocated or fractured mandible.

The eyes provide many signs of systemic and local disease. With Bell's palsy, the patient cannot close his eyelids tightly. Edema below the eye is very often a sign of renal or cardiac disease. A blue sclera may be indicative of osteogenesis imperfecta whereas a yellow sclera may relate to jaundice. Infection or extraction of the maxillary teeth may cause the eyelids to swell.

The nose and paranasal sinuses are

anatomical neighbours of the oral cavity. Thus any nasal infection or sinusitis has a definite effect on the treatment planning. Pain supposedly emanating from the maxillary teeth may be caused by sinusitis.

The examination of the neck may reveal swelling caused by a dentoalveolar abscess, actinomycosis, cellulitis, infectious mononucleosis or neoplasm. Infection of the mouth can spread rapidly to the neck region and produce serious complications such as Ludwig's angina and cellulitis. Palpation may reveal swollen lymph nodes which could be due to infectious mononucleosis, primary or secondary neoplasm.

This examination of the head and neck, with practice, requires very little time and yet may reveal many signs and symptoms which have an important effect on the diagnosis and plan of treatment.

Dental Examination

(a) Soft Tissues

The dentist must learn to see beyond the teeth in an oral examination. He should note any changes in size, shape, colour, function, sensation, position and mobility of the lips. Malocclusion, habits, mouth-breathing and congenital factors can produce abnormal size, shape, function and position of the lips. Neuroma and paraesthesia produce changes in sensation. Lesions of herpes simplex, infectious mononucleosis, burns and neoplasm may be apparent.

The buccal mucosa should also receive close attention. Abnormal pigmentation may be a sign of disease; the bronzing with Addison's disease and the white appearance with chemical burns and leukoplakia. Lesions such as denture sores, Fordyce spots, burns, mucocoele, pregnancy tumour, lichen planus and neoplasm may be observable. The orifice of Stensen's duct may be inflamed, indicating an infective process.

The tongue exhibits many signs and symptoms of disease. Enlargement may be due to infection or tumour. An erythematous tongue may be a sign of anaemia or chemical agents. Leukoplakia can give the tongue a patchy, white fissured appearance. Lack of mobility can be a sign of infection, neurologic disorder or ankyloglossia. A smooth tongue may be due to degeneration, to avitaminosis B or iron deficiency anaemia, or to complete lack of specialized tissue as in median rhomboid glossitis. Prominent filiform papillae can form the typical black hairy tongue.

The common symptom of a burning tongue may be due to infectious, hormonal, nutritional or allergic disorders, pernicious anaemia or leukoplakia.

Lesions of the tongue are quite common and can be caused by physical trauma, chemical burns, infection, neoplasm and allergies.

The sublingual space is an important and often neglected area. Enlargement here can be caused by osteomyelitis, ameloblastoma, squamous cell carcinoma, osteogenic sarcoma or ranula. This area, like the tongue, is a particularly dangerous place for malignant disease because of the ease of spread.

Examination of the hard and soft palates may reveal colour changes due to acute inflammation, denture sores, leukoplakia or heavy smoking. Enlargement is the most common sign of disease such as cysts, neoplasm, dentoalveolar abscess or acute infection. Ulceration may be caused by infection, physical and chemical trauma, hypersensitivity or neoplasm.

The pharynx and tonsils should also be included in the oral examination. An inflamed mucous membrane can be a sign of acute pharyngitis, tonsillitis or mouth-breathing. Occasionally benign and malignant neoplasms may be seen in the oropharynx.

During the course of examination, the breath and saliva can be appraised. The breath often can be of diagnostic service.

The fruity, acetone breath of untreated diabetes mellitus, the uremic breath of kidney dysfunction, the fetid breath of bronchitis and chronic maxillary sinusitis are readily apparent. Foul breath of local origin may be due to periodontal disease, untreated caries, fistular discharge and poor hygiene.

Ptyalism is often present with infections, physical trauma, teething and metallic poisoning. Aptyalism may be due to infected salivary glands or obstruction of the ducts.

Even with the few diseases mentioned and the brief description of signs and symptoms, one can readily understand the importance and value of this examination. Local disorders, which have a decided influence on treatment planning, must be diagnosed. In addition, the recognition of the oral manifestations of a systemic disease may lead to its early diagnosis and treatment. A medical examination and consultation is very important with respect to the diagnosis, prognosis and treatment of these cases. Predisposing factors affect both the prognosis and treatment and without the elimination of these factors local treatment is likely to be prolonged and ineffective.

In the course of this general examination the dentist may decide to take the patient's temperature, pulse, blood pressure and respiration. Such information is of value in cases of acute infection and general anaesthesia.

(b) Gingival Tissues

With the high incidence of periodontal disease, the examination of the gingival tissues takes on special importance. Any change in the normal colour, texture and contour of the tissue may be a sign of disease. By noting such changes as well as the type and depth of pockets, contour and recession of tissue one can make a provisional diagnosis of the gingivitis or periodontitis present.

Examination of the gingival tissues

may also reveal sinuses, tumours such as epulis, pregnancy tumour and giant cell tumour, bifurcation and trifurcation involvements, leukoplakia and fractured roots. The presence of a sinus or trifurcation involvement affects the prognosis and treatment of the tooth involved, whereas presence of periodontitis may affect the prognosis and treatment of all the teeth. The examination of the gingival tissues thus plays an integral part in the routine examination and may have a direct bearing on the ultimate diagnosis, prognosis and treatment.

(c) Teeth

In a systematic examination of the teeth, one should note the following features: general aesthetic effect, occlusion, missing, supernumerary and malposed teeth, present restorations and appliances, caries, mobility, contacts and hygiene.

In examining the occlusion, overjet, overbite and cuspal interference in all excursions must be considered. Such findings have a profound effect on diagnosis and treatment.

The general aesthetic effect of the teeth, the shape, size and colour should be considered. Microdontia, Hutchinson's and geminate teeth may be present. The endogenous colour of the teeth can often be diagnostic: the pink tooth due to traumatic injury, the brown stained tooth of mottled enamel and the grayish-blue hue of opalescent dentine. Exogenous material such as materia alba, green and black stains often is indicative of poor hygiene.

The value of this examination in the diagnosis and treatment of a case is apparent to all clinicians.

Radiographic Study

The radiographic examination is one of the most useful diagnostic aids in dentistry. It must be remembered however, that radiographic interpretation is only an aid in diagnosis and as such one must

have at least two views of each area in question, and must use the interpretation in conjunction with clinical evidence.

Bone structure is readily seen with radiograms. Density, continuity and trabeculation may be suggestive of conditions such as fibrous dysplasia, sclerosing osteitis, hyperparathyroidism, rarefying osteitis, cystic lesions, fractures, benign and malignant tumours. The density and amount of bone support is often of diagnostic service in prosthetic, operative and periodontal conditions.

Foreign bodies in bone or soft tissues such as gunshot, gutta percha, root canal instruments, needles and salivary stones can be seen and located in radiographs.

In orthodontic cases, cephalometric, postero-anterior and intra-oral radiograms are used to study the relationship of the maxilla and mandible, facial symmetry, eruption sequence, missing and supernumerary teeth, pathology, caries and root form. Combining this radiographic information with clinical observations and history, the orthodontist can decide on the diagnosis, prognosis and treatment.

Radiograms enable the dentist to see the position, structure and form of teeth. Incipient caries and proximal caries, often not discernible with probing, are readily apparent. Early treatment and prevention of pulp involvement are thus possible.

Changes within the pulp such as internal resorption, pulp stones, secondary dentine, recession and obliteration can be recognized. One is therefore able to diagnose conditions such as opalescent dentine and also institute prompt root canal therapy to save a tooth with internal resorption.

The value of the radiographic examination is immense. Its widespread use in diagnosis and treatment planning is conclusive evidence of its rightful place in dentistry.

Study Models

Study models are frequently used to

facilitate an accurate diagnosis and successful treatment plan. In full denture prosthesis they are used to study the shape and size of the alveolar ridges, the amount of interalveolar space and unfavourable undercut areas. In removable and fixed partial denture prosthesis the occlusion, including overjet, overbite, centre line and cuspal interference, the form of the teeth, selection of abutment teeth, types of preparations, path of insertion and design of the prosthesis can be studied.

In periodontal cases involving occlusal correction and in full-mouth rehabilitation cases study models are of great benefit. The occlusion and the necessary corrective measures can be studied at the dentist's leisure, confreres can evaluate the case and eventually the desirable treatment can be transferred to the patient.

Study casts are used routinely in orthodontic practice to study the form and shape of the arches and teeth, all phases of occlusion, the relationship of alveolar bone to the teeth, centre line and individually malposed teeth. The information obtained has a direct bearing on the diagnosis, prognosis and treatment planning.

Laboratory Procedures

There are a number of laboratory procedures which may be used to facilitate the interpretation of signs and symptoms and the results of clinical examination. These tests are designed to record deviations from normal body physiology which cannot be detected through direct observation. Indications for their use are dependent upon the history and clinical findings.

Clinicians too often avoid laboratory examinations because they are not adequately familiar with them⁸. The dentist should at least be familiar with these tests and when necessary should institute such procedures in cooperation with the patient's physician.

The laboratory procedures have a definite role in the diagnosis and treatment planning of specific cases. Haematologic and chemical studies, urinalysis and serological tests may reveal systemic diseases such as blood dyscrasias, hyperparathyroidism, syphilis and diabetes mellitus; any one of which is important both to the patient and to the dentist. Lesions associated with diabetes mellitus, syphilis and anaemia require systemic treatment. Oral lesions due to leukemia, agranulocytosis or Hodgkin's disease may terminate disastrously if inadvisable surgery is undertaken²⁹.

Several laboratory tests are used frequently in dentistry. The bacteriological examination is used in endodontic and preventive treatment. Haematologic tests such as erythrocyte count, haemoglobin level, white cell count, blood platelet count, bleeding and clotting time and sedimentation rate are used occasionally in oral surgery.

The biopsy is another test which is rightfully finding a place in dentistry. It is of value not only in diagnosis, but also in prognosis and treatment. With squamous cell carcinoma and basal cell carcinoma, it is frequently impossible to distinguish the two lesions clinically, yet the difference in prognosis and treatment is most important.

Biopsy affords a careful evaluation of premalignant lesions such as leukoplakia and senile keratosis and early diagnosis of innocuous appearing malignant lesions. "Whatever the theoretical dangers of biopsy may be, the dangers of attempting radical treatment or of abandoning a patient to a hopeless prognosis without tissue proof are far more serious"³⁰.

Vitality tests are used routinely in oral examinations. They include both thermal and electrical tests which in actuality record nerve response and not vitality. A tooth having sensation is not necessarily healthy. These tests are based on the assumption that nerves become more sensitive when the pulp is inflamed and thus

react more violently to stimulus. Such a reaction is almost diagnostic with the gangrenous pulp where heat expands the gases and produces pain, and cold relieves the pressure and pain.

The response to stimuli however, varies greatly according to patient reaction, conductivity of restorations, cement lining, secondary dentine and contact with adjacent teeth. Thus in many cases the tests are unreliable and inconsistent. Nevertheless, all three tests should be used to locate an offending tooth and to augment the signs, symptoms and radiographic interpretation. Used in this manner, the tests play an important role in diagnosis and treatment planning.

Transillumination is an old test which still has application in dentistry. The only disadvantage is the necessity of darkening the room. This test can be of diagnostic aid in revealing maxillary sinusitis, proximal caries and subgingival calculus and in this way it also affects the plan of therapy.

EVALUATION AND ANALYSIS OF COLLECTED INFORMATION — DIAGNOSIS

In the important analysis of this assembled information, we must interpret the facts by studying the relationship of cause and effect, by relating symptoms to actual tissue changes, by weighing the exciting and predisposing causes and by considering possible sequelae. In most cases the diagnosis, probable prognosis with and without treatment, and treatment plan can now be determined. In other cases, consultation with other members of the dental profession or with the family physician may be necessary. Finally, a record of the history, examination findings, prognosis, treatment plan, treatments and final examination should be compiled to form the complete case record of the patient. Such a record furnishes valuable information for treatment planning, research, reference and medicolegal purposes.

CONCLUSION

The method set out in this essay is by no means the only way in which an accurate diagnosis is obtainable. It is a proven, inclusive, efficient procedure however, in which almost every practical possibility has been set out and a method devised so that the rare occurrences will not be overlooked. It is a foundation upon which the clinician can build his own method of diagnosis.

One must realize that even the simplest action, broken down into its basic parts, seems very complex. Thus the art of diagnosis, broken down into each thought, question and action, seems very long, detailed and almost untenable. With practice, the clinician soon masters the art and moves quickly through the procedures.

It is the perplexing case which challenges the diagnostic ability of the dentist and compensates for all his previous searching examinations. With an orderly, carefully considered and all inclusive method of diagnosis, the evasive conclusion will not escape him⁸.

REFERENCES

1. Bartels, J. C. Diagnosis and treatment planning. *J. Pros. Dent.* 7:657-662, Sept., 1957.
2. Baume, L. J. The scope of dental medicine. *J. Dent. Med.* 12:53-57, Apr., 1957.
3. Bernier, J. L. The management of oral disease. St. Louis, The C. V. Mosby Co., 1955, (p. 36).
4. Brayden, T. H. Percussion—its use as a diagnostic aid in dentistry. *The Dent. Stud. Mag.* 32:24-28, Mar., 1954.
5. Burkett, L. W. Oral medicine—diagnosis and treatment. 3rd. ed. Montreal, J. B. Lippincott Co., 1957.

6. Burrill, D. Y., Huddleston, S. O. and Childers, J. M. Oral diagnosis and treatment planning. *J. of Kentucky State Dent. Assoc.* 8:28-30, Jan., 1956.
7. Cheraskin, E. Oral diagnosis. *D. Abstracts.* 2:278-279, May, 1957.
8. Cheraskin, E. and Langley, L. L. Dynamics of oral diagnosis. Chicago, The Year Book Publishers, Inc., 1956.
9. Deal, H. J. Palpation as a diagnostic aid in dentistry. *The Dent. Stud. Mag.* 32:11, Feb., 1954.
10. Dingman, R. D. and Hayward, J. R. The value of writing case histories. *J. Oral Surgery.* 5:123-129, Apr., 1947.
11. Eaton, H. M. The responsibility of diagnosis. *J. Canad. D. D.* 22: 82-84, Feb., 1956.
12. Elfenbaum, A. Diagnosis in the dental office of the future. *The Fortnightly Rev. of Chicago Dent. Soc.* 30:9, Nov. 15, 1905.
13. ———Sherlock Holmes, D.D.S. *Oral Hygiene.* 47:45-48, Feb., 1957.
14. ———Use of our five senses in diagnosis. *Oral Hygiene.* 47:53-57, May, 1957.
15. Finn, S. B. Clinical pedodontics. Philadelphia, W. B. Saunders Co., 1957.
16. Heflich, M. D. A plea for history taking. *N. Y. Dent. J.* 18:293-297, Aug.-Sept., 1952.
17. Hutchinson, A. C. W. Dental and oral x-ray diagnosis. Edinburgh, E. and S. Livingston Ltd., 1954.
18. Kotch, R. L. Problems in diagnosis. *N. Y. Dent. J.* 19:237-239, May, 1953.
19. Landa, J. S. Is dentistry an art or a science and what is the most effective way of teaching dentistry as a profession? *J. Dent. Med.* 12:66-70, Apr., 1957.
20. Marshall, D. G. Oral diagnosis. *J. Canad. D. A.* 21:230, Apr., 1955.
21. Miller, S. C. Oral diagnosis and treatment. 3rd. ed. New York, The Blakiston Division, McGraw-Hill Book Co., Inc., 1957.
22. Mitchell, A. W. Diagnosis and treatment. (ed.) Pakistan Dent. Rev. 7:24, Jan., 1957.
23. Monto, R. W. Oral manifestations of hematological disorders. *J. Dent. Med.* 12:47-51, Apr., 1957.
24. Mullen, J. H. Dental health education. *Dent. Stud. Mag.* 32:11-17, Mar., 1954.
25. Pinckney, E. R. Role of the dentist in the detection of non-dental disease. *J. Amer. D. A.* 50:185-186, Feb., 1955.
26. Samson, E. The unitary system. London, Cottrell and Co., n.d.
27. Schram, W. D. Diagnosis and procedures in oral diagnosis. *J. Canad. D. A.* 19:583-591, Nov., 1953.
28. Stones, H. H. Oral and dental diseases. 3rd. ed. Edinburgh, E. and S. Livingston Ltd., 1954.
29. Thoma, K. H. and Robinson, H. B. G. Oral and dental diagnosis. 4th. ed. Philadelphia, W. B. Saunders Co., 1955.
30. Todd, J. C., Sanford, A. M. and Wells, B. B. 12th. ed. Philadelphia, W. B. Saunders Co., 1954.
31. Walsh, J. P. High and low aims in oral diagnosis. *Aust. D. J.* 1:23-25, Feb., 1956.

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PARTICIPATION IN PUBLIC HEALTH—Public health programs should be so organized that the people who have the problems are given an opportunity to plan and contribute to the solution. Too often there is little participation by the individual, who passively receives the services. In a sense, health officials should aim to make every citizen a public health worker, at least in his own behalf.

Joseph W. Mountain.

Dentistry in Europe

DON W. GULLETT, D.D.S., Secretary, Canadian Dental Association

Just prior to the Rome Congress last fall, Dr. Don W. Gullett, Secretary of the Canadian Dental Association made visitations to several European countries. He was able, even in a short visit, to develop interesting and factual reports relative to dentistry in these countries. Short visits, however, do not permit complete investigations and consequently Dr. Gullett has entitled this series of reports "Notes on Dentistry in Europe".

Each issue of THE JOURNAL from now until the end of the year will contain "Notes" on dentistry in a European country. Sweden, Finland, Denmark, and Holland will follow this opening report on "Dentistry in Norway".

Editor.

PART I

Notes on Dentistry in Norway.

Population: 3,500,000

No. of dentists: 2,100

(of which approx. 21½% are female)

Ratio to population: 1/1666

PUBLIC DENTAL SERVICE

Like other countries, with the institution of the Norwegian Act of 1949 respecting Public Dental Services, Norway was short of dental personnel to supply the service. With only one dental school graduating 50 dentists a year it was necessary to increase the number of dentists by some rapid process. In this emergency the Norwegian government undertook the financial responsibility of sending students to foreign schools in order to obtain their education. At the present time there are over 200 Norwegian students attending foreign schools under this arrangement. For the most part these students are in British dental schools. A beginning this year is being made toward building increased teaching facilities for dentistry and when completed all dental training will be given in Norway. This action has improved the ratio of dentist to population

rapidly. As late as 1955 the ratio was stated to be 1/1842 and it is predicted that within 5 years time the ratio will be 1/1450. Even with this rapid betterment of ratio there is said to be a great shortage of dentists.

Free dental treatment for school children was instituted in 1910 in the larger municipalities of Norway. When the 1949 Act came into force decision was made to gradually initiate the service in the outlying areas leaving the existing service in the larger municipalities until the last for introducing the new service. Practically all the counties at this date have the plan in operation but only one (Finmark), which is the most northern, is completely organized for the service. The Act states that Public Dental Service is to be in operation for all of Norway by the year 1965.

Section 1 of the Act indicates the priority of service free of charge. The Dentist in the public service must work 1,000 hours a year for this group. He is permitted to work 800 hours a year for pre-school children, expectant mothers and adults. Expectant mothers and pre-school

children are expected to receive preference. The plan is to make children 3 to 6 years of age eligible as soon as the government can afford to do so. The 6 to 18 age group was given preference on the basis of greatest need. For services, other than the 6 to 18 year age group, a charge is made in accordance with a fixed government fee schedule said to represent cost of service. This schedule is approximately three-quarters of the fee in private practice.

The administration of the plan is characterized by its simplicity. It is a decentralized system. A director of dental services is appointed for each county (20) by the government and each county has a dental service committee. I was informed that both the Public Dental Service and the School Dental Service are administered by one dentist, a secretary and two office girls in the government. Plans for initiating and conducting the service must conform to the specifications laid down in the Act and are submitted to the ministry for approval.

Expenses of operating the Public Dental Service are divided between the government and the county. The Government pays from 60% to 80% of the expenses in rural counties according to the ability of the county to pay. For municipalities, the government pays 30%. The expenses covered under this arrangement are salaries, wages and travelling expenses of county dental officers. The ministry may grant specific sums for the purchase of equipment to counties introducing the service. An annual contribution of 5 krone* is made for each person residing in the local district and entitled to free dental service. The local districts are required to meet the expenses relating to rent of dental clinic and also net expenses following the deduction of the contributions.

Public Dental Service is operated in

clinics by salaried personnel. Some 75 dentists are presently employed in the service. In comparison to other levels dentists are said to be paid on a high level. The salary ranges from a minimum of 27,000 krone to 32,000 krone. In addition the government pays 1,900 krone annually, free of tax, into a pension fund for dentists in the service. I was told that this creates a pension equal to the highest pension in Norway. If a dentist dies his widow receives annually 9,000 krone plus 10% for each child. For his services to adults a dentist in the service may choose to take 2,000 krone less in salary and retain 20% of the adult fees he receives.

No specialists are presently employed in the service and those requiring specialist services are referred to private practitioners. However, it is planned to have at least a specialist in oral surgery and one orthodontist to act as advisor in each county.

The Norwegian Dental Association supported this legislation establishing Public Dental Service. The government accepted completely the recommendations of the Association respecting salaries and many other details. The salaries are equal to those of the district medical officers, a captain in the navy and a first class engineering graduate, which is considered a high classification.

The services are complete for the age group 6 to 18 with the exception of specialists' services, when necessary. This means inclusion of all operative and ordinary surgical procedures.

All qualified dentists are eligible for the service.

Dental health education is centralized under the supervision of the dental department of the Ministry. Booklets, films etc. are supplied to dentists in the service. This activity is centralized in order to assure accuracy and uniformity of information.

Government officials state that this plan is not socialized dentistry or any

* Approximately 7 Krone to the dollar (1957).

attempt to socialize the profession in the future. They say that when the present plan is in full operation and if money is available, raising the age for free service to 21 may be considered, but no further. With this possible addition they state that private practice should always be protected as the best form of dental service for adults.

An example of the workings of the plan was explained. Finmark, the most northerly and sparsely settled county, is the only county fully organized under Public Dental Service. The population of this county is 50,000. Before the war there were six dentists in this county. Now there are 27 dentists of which four are in private practice and 23 are working in the service. A strong demand exists among the people of this county for several more private practitioners. Such illustration is given as proof that service creates demand for dentistry.

AUXILIARY PERSONNEL

Dental technicians do not have special legislation in Norway but come under a law common for all craftsmen such as carpenters, masons, and other craftsmen. This law calls for a 5 year training period for all craftsmen. The training of dental technicians is on an apprenticeship basis of 5 years, one year of which is spent in a technical school where all kinds of craftsmen are trained. This school has no connection with the dental school. At the end of the 5 year period a rigid examination must be passed in order to qualify. If the candidate is successful in passing the examination he then receives technicians' pay but can only work for another master technician or a dentist for a further two year period. At the end of this two year period he may then take the master technician's examination and if successful set up for himself. The training is rigid and controlled. It is permissible for a dentist to train a technician and occasionally it happens but the same examinations must be taken.

The Association of Dental Technicians controls admission for training. Currently a shortage of dental technicians exists and the association of technicians is considering expansion of the training arrangements.

DENTAL HYGIENISTS

There are only a few (20) hygienists to date and the training program is not satisfactory to qualify true dental hygienists. All, save one, are employed in the government service. These have received a training clinically with a few lectures but the academic course is by no means rigid. In 1951 the government became greatly interested in establishing a training scheme similar to the New Zealand dental nurse plan. The Norwegian Dental Association fought against this effort and it is believed to be a dead issue. The establishment of a proper training program for dental hygienists is anticipated.

OSLO SCHOOL DENTAL SERVICE

As stated above the School Dental Service was established in Norway in 1910. The Public Dental Service (1949) will eventually replace this service. The Public Dental Service is gradually being established in the northern counties and moving southward. The School Dental Service employs more dentists at present and exists for the most part in the municipalities of Southern Norway. Approximately 300 dentists are employed full time in this service (110 in Oslo which has a population of approximately 300,000). A large percentage of female dentists is employed in this service. At least 500 dentists work part time for the School Dental Service. These services are municipal schemes and the government contributes to the salaries of the dentist and the dental assistant (25% in rural and 12½% in urban municipalities). The service is free for young people up to 18 years of age. Dental care for 900 children per year is con-

sidered full time employment for the dentist. The service is entirely voluntary. Statement was made that 70% of Oslo children receive regular dental care under this plan.

Emphasis was laid upon making the maximum use of equipment in all clinics. The clinics operate six days a week (Saturday morning only) and 43 weeks during the year. Two daily shifts of personnel occupy the clinics, 8.00 a.m. to 2.30 p.m. and 2.30 to 9.00 p.m.

Young people ages 18 to 20 can go to private practitioners in Oslo and have 80% of charges refunded from the Sickness fund.

Several of the dental clinics in Oslo were visited. The clinics are exceedingly well-equipped and the efficiency is of a high standard. The location of the clinics indicates that dental health is considered a highly important matter. There are some 70 dental clinics in Oslo. Specialist services consist of oral surgery and orthodontics. Orthodontics is conducted for the most part on a consultative basis with reference to private practitioners. In addition to the central clinic where special dental services and administration are carried on, there are three types of clinics:

- (1) In schools, where they form a part of the health clinic. The clinics occupy a prominent location in the schools.
- (2) In welfare centres, which serve many functions. For example, children are taken care of when the mother is sick.
- (3) In the emergency centre situated in the heart of the city, rather surprisingly in a hotel owned by the government. This centre is kept open at specified hours, particularly evenings, holidays and Sundays, where dental emergencies are taken care of and patients referred back to private dentist. A charge is made based on cost of service. The service is available to all including foreign visitors.

RESEARCH

The Norwegian Institute of Dental Research in Oslo is a small, efficient and well-equipped laboratory. Financial sup-

port is derived from the football pools and amounts to 250,000 krone a year (medical research receives 800,000 krone annually from the same source). The present staff consists of a director, three full time qualified dentists, two part time research fellows, a technical staff of three, a secretary and one medical research man specializing in dental research. The research effort is most creditable.

DENTAL EDUCATION

Norway has one dental school situated at Oslo, The Royal Dental College and one to be built at Bergen for which plans are ready. The Oslo school is a State school and the Bergen school is to be a part of the University of Bergen. It is contemplated that the Royal Dental College will eventually become a part of Oslo University.

The admission requirements for the dental school are the same as those for Oslo University. Preliminary education to meet the academic requirements consists of 7 years elementary education and 5 years secondary education plus an entrance examination being the same for all university entrants. It was stated that dentistry and medicine get applicants with highest academic standing. For years those admitted have held first class honour standing. The reason given for this condition is the high respect held by the people for the health professions.

The dental course is four years of 41 weeks' each year. It is anticipated that the dental course will be increased to five years in the near future.

The number in a class at present is fifty, which is far too few to meet the demand. As stated above the government has sponsored Norwegian students attending foreign schools for several years. In order to obtain this privilege the student must agree to enter state service (for two years) after graduation. After graduation from a foreign school, attendance at the Oslo school for six

months is compulsory, after which an examination must be passed (approx. 90% pass). In case of failure such students must continue at the school until able to pass the examination. The system of using foreign schools was not considered desirable but thought better than attempting to educate large numbers with insufficient facilities. When teaching facilities are expanded this system will be discontinued.

All university education, including dental education, is free in Norway. Fees were discontinued in 1945. Instruments are entirely owned by the school.

Our visit occurred during vacation period but arrangements were made to go through the school and the teaching arrangements were thoroughly explained. The school is situated in a fine building which has become far too small. It is estimated that Norway needs 110 to 120 graduates a year. An addition of equal size to the present building is planned but will not be built at least until the school at Bergen is completed. All equipment is modern and no old equipment is to be seen anywhere in the school.

The teaching is conducted in eight departments of the school, namely: anatomy, physiology, paedodontics, orthodontics, periodontics, oral surgery, restorative dentistry and prosthetics. The subjects of chemistry, pathology, bacteriology, pharmacology and forensic odontology are given by special lectures. The trend of dental service in Norway being to give emphasis to dentistry for children, the school curriculum gives the subjects of paedodontics and orthodontics due importance.

COMMENT

The statements made above are factual, presented here subject to error which can so easily occur when a visit consists of only a few days duration. Other points arose which perhaps are better placed under this heading.

1. The Norwegian Dental Association has

worked closely and in cooperation with government officially in planning dental services. The relationship between the Association and the Government appears excellent.

2. A high respect for dental health appears to exist in Norway which is reflected in the fine attitude of the public toward members of the profession. Such impression could hardly be accidental. A guide raised the point during a sight seeing tour, not knowing she was talking to dentists.
3. The pride in the service exhibited by the dentists employed was notable. It is not 'just another job' for them. The fine equipment and personnel teaches the public to expect the best form of service from private practitioners which is said to be one of the objectives.
4. On one occasion it was pointed out that the institution of the Public Dental Service can work a hardship on some members of the profession in that where the service is initiated the resident dentist loses his practice. Later in discussing this point the answer given was that no need existed for this to happen. If the resident dentist is a suitable man he is given first opportunity of entering the service. In any event the service can hardly do more than look after treatment for children and experience has shown that the service greatly increases adult demand in any area.
5. Health education does not have the prominent part in the plan considered essential by dental health planners on this continent.
6. Real evidence exists that the teaching given at the Oslo school is good. Certain differences exist compared to those which exist on this continent. The Royal Dental College is an independent institution, as such basic sciences are taught by professors and lecturers of the school. The school has no connection with the university or faculty of medicine of the university. Likewise there is no hospital relationship.
7. Percentagewise it will be observed from the figures given that approximately 18% of Norwegian dentists are now employed in the two existing services. Approximately an additional 500 dentists are employed part time in the Municipal (School) Dental Service. The balance are in private practice.
8. Progress in dentistry in Norway is real. An alertness for improvement in every phase of professional activity exists.
9. Gratitude is expressed to all those who so kindly received me and gave so generously of their time in providing information.

ABSTRACTS

The Hospital's Responsibility for Patient Care

ROBERT R. CADMUS, M.D.

The word "hospital" means not only bricks, mortar and beds, but rather, complete diagnostic, therapeutic, and preventive service. It means education of health personnel and research. It means ambulatory care and an interest in the total person, including the social and economic spheres. When one considers the total person, one also must necessarily include dentistry in its broadest definition.

A real understanding of the position of the hospital in-patient care requires some understanding of history. Hospitals, basically, have ecclesiastical roots and as they evolved, they also adopted some of the practices of both government and the military. Recently, they have moved from the tin cup charity of pest houses to institutions of healing and have become big business. This has occurred primarily in the last few decades with the coming of scientific medicine.

The hospital administrator serves the trustees, the staff, both medical and dental, and the patient and the public. He is responsible for a large group of personnel and he must keep this group effective and productive, yet with high morale. In these various groups there are many social and cultural differences.

The Board of Trustees is responsible for the total operation, for the safe building, for the operating personnel, for the finan-

cial stability, for the appointment of the medical and dental staff and for the legal affairs of the hospital. Quality of medical care is also their responsibility through their delegated medical and dental staff.

Historically, trustees have delegated professional care to the medical staff. If, under the circumstances, the physicians recommend a policy such as no surgery without a physical examination by a physician, then the Board of Trustees accepts this suggestion of their advisers and within their legal authority, adopt this as an internal regulation. Trustees usually feel that they must accept the physician's advice in such matters, and they feel legally comfortable with the professional backing of the medical staff. Trustees feel no compulsion to open their doors to other health workers including dentists, unless so advised by the medical staff. Part of this problem rests, therefore, with the physicians.

Trustees are mindful of new ideas, mindful of the rapidly evolving hospital concept, and they have been indoctrinated recently in the importance of treating the whole patient, and obviously, dentistry is included in this broader concept.

The administrator should recognize hospital dentistry as something more than oral surgery. He should see that there

are dental instruments, personnel equipped to assist, and in general, the facilities should be made equally available to physician and dentist according to the ability of the institution. He should develop better charging techniques both in the out-patient and in the in-patient services, in view of some of the problems short-term dental patients present.

There is much that the dentist should do to help in this matter. First, the dentist should believe that the answer to his liking is coming. He should believe in evolution. He should believe in the unevenness of progress, which is a part of the free enterprise system. He should be guided by goals and not be wedded to methods. He should accept the philosophy that the best medical care is provided when a physician performs the presurgical physical examination.

Definitions and boundaries are best settled locally rather than at a national level, and on the basis of mutual professional trust and respect. If an individual dentist is qualified and able to provide good dental care, his services will be recognized and his demands will be met and understood. Dentistry is making great strides in education and this will automatically help solve much of the problem.

Dentists should continue to stimulate thinking on hospital dentistry and continue to probe for weaknesses or shabby thinking on the part of hospital administrators and trustees. They must always think in terms of patient care rather than status, economics, self-interest, or any basis other than what is best for the patient.

Journal of Oral Surgery
Vol. 16 — July 1958 — No. 4.

Pontic Design

CARLOS B. HARMON, Major, USA (DC).

There are three basic requirements which must be met in the design of pontics. First, they must promote health and cleanliness. Pontics that stagnate the blood in the soft tissue and become foul and odoriferous are a travesty of modern dentistry.

Second, pontics must restore a degree of function consistent with the tolerance of the abutment teeth to assume the additional load. Thorough diagnosis and good judgment must be combined in estimating the ability of remaining teeth to accommodate the additional load they will be called upon to carry. The secondary functional demands of aesthetics, phonetics, and food manipulation must be satisfied by the conformation of labial, buccal, and lingual surfaces.

Third, the aesthetic requirements imply that a pontic appear natural in form, position, and colour. Obviously, the pres-

ence of gold as a part of the pontic should be concealed to the greatest possible degree. This may be accomplished by the control of the extension of metal into visible areas and the manner in which this gold reflects light. The presence of gold is detectable only when it reflects light rays to the eye of the observer.

Pontics constructed in an all-out effort for aesthetics invariably sacrifice strength, health, and cleanliness. Metal in contact with the gingivae, violated embrasures, and resulting irritation are common consequences of this type of compromise. Exponents of this type of bridgework may endeavour to justify its use, but they can hardly contend that such principles of construction fully meet the prerequisites of the advanced concept of the fixed dental prosthesis.

The Journal of Prosthetic Dentistry
Vol. 8 — May 1958 — No. 3

General Anaesthesia and Pre-Medication in Dentistry for Children

MANUEL M. ALBUM, D.D.S.

The child who has been shunted from dentist to dentist results inevitably in a traumatized youngster. With understanding of the child by the dentist, this condition need not exist. Good dentistry can be done for a normal child or a severely handicapped youngster with cerebral palsy or mental retardation, with pre-medication. With pre-medication and general anaesthesia, conscientious dentists needn't be frustrated in their desire to help these youngsters.

In the use of pre-medication in the office, the initial visit becomes a fact-finding examination. Taking into consideration the child's age, basal metabolic rate, blood pressure, nervous apprehension, brain damage, growing stature, etc. will enable one to obtain proper and correct sedation for the required dentistry. When normal measures fail, it becomes a question of not only allaying the fears of the child, but also providing satisfactory working conditions under sedation.

Using an initial dose of $2\frac{1}{2}$ -3 grains of one of the barbiturates in combination with 25 mgm. of Demerol, will produce a sedation which will be smooth, efficient, and provide little excitement on the part of the patient. An excitement period is only produced by insufficient and inadequate pre-medication. There is no need to have a youngster "climbing walls" when the dentist understands the background of the medication used as well as the child himself.

The safety factor latitude with the barbiturates is very wide, and there should be no hesitation on the part of the dentist to use pre-medication as an adjunct to his practice. With the dosage used, there need not be any fear of respiratory depression or failure.

When it becomes impossible to utilize or obtain good results from pre-medication in the office for reasons of tolerance, brain damage, or inability to retain the medication, general anaesthesia under hospital conditions may be used for the required dental procedures. This technique is very useful in instances where patients travel long distances for treatment of extensive dental needs.

Using nitrous-oxide and oxygen in combination with trichlorethylene and the administration of succinylcholine as a muscle relaxing agent, will provide a smooth anaesthesia with little discomfort to the patient as well as to induce a faster recovery time.

The operative dentistry is done first under this technique, quadrant by quadrant. When all the cavities have been properly prepared, they are filled, utilizing the necessary medicaments, cements, and amalgam and other permanent filling materials as used in the daily office routine. This again is carried out by quadrants.

Pulpotomies, jacket preparations, bridgework, and other procedures performed in the office can be done under this technique of general anaesthesia.

Extractions should follow the operative work. Sutures as well as haemostatic agents should be used where indicated.

Under the technique of general anaesthesia, the patient as well as the dentist should not settle for second-grade dentistry. The conditions are ideal in every respect for the finest type of dentistry.

It is possible to perform excellent dentistry with definite favourable results on the difficult, obstreperous, and hard-to-manage child patient.

Wanted: A Re-evaluation of the Profession's Philosophy Regarding Manpower

JOHN C. BRAUER, D.D.S., M.Sc.

Manpower in dentistry, with its many attending problems and questions, presents an immediate and long-ranged challenge to every dentist and dental society, as well as to dental education, and legislative assemblies. The profession must determine whether to provide dental manpower for the population in terms of need or effective demand, and, furthermore, what sources of manpower are to be developed.

Every effort should be expended by the profession to make preventive dentistry an effective weapon in the reduction of total dental needs, and thereby, reducing the total number of dentists required.

The wasted manpower in dentistry is tremendous, perhaps as much as 35 to 50 per cent, when one evaluates the potential of a dentist who is trained in the effective use of the dental assistant, and when well-trained dental assistants are available. The adequate utilization of the dental hygienist and the laboratory technician further complement this favourable potential.

The optimum or desired dentist-population ratio on a national level is not known today, and there is considerable evidence that a favourable ratio in a given state may vary a great deal from other states. Considering the potential role of preventive dentistry, for the increased utilization of the dentist's skills and knowledge which now is dissipated in a large measure, for a more efficient operating environment with reference to office space and equipment, of present-day national economy, the dentist-population ratio on a national level perhaps could be favourably pegged as 1:2,500 or 1:3,000.

Dental schools obviously cannot assume the major responsibility for the education and training of the great number of assistants needed. However, the dental schools are obligated to find ways and means of adequately training the dental student how to use, effectively, a well-trained dental assistant.

Southern California State Dental Association Journal.
March 1958

The Prevention of Carcinoma of the Lung

JOHN O. GODDEN, M.D.

Responsible medical scientists in many nations have after careful study agreed that smoking, particularly cigarette smoking, is an important cause of cancer. Special study groups appointed by the profession and by government have reviewed the evidence leading to this decision and confirmed this conclusion. The individual physician must accept new responsibility because of this momentous advance in medical knowledge.

Most adults who are heavy smokers will not stop smoking. Moderation in

smoking or substitution of cigars or pipes for cigarettes is recommended.

All adults are urged to consider the significance of their example in this matter, especially to adolescents who are not yet habituated. The chief hope, in reducing the incidence of carcinoma of the lung and other diseases related to the tobacco habit, is in the increase in the percentage of non-smokers among the adolescents and young adults in our population.

Canadian Journal of Public Health
Vol. 49 — June 1958 — No. 6.

Incidence of Gingivitis as Related to Sex, Occupation, Tobacco Consumption, Toothbrushing and Age

ARNULF ARNO, et al. Norway.

An examination of the incidence of gingivitis as related to sex, occupation, tobacco consumption, oral hygiene, and age was carried out on the employees of a modern manufacturing company in Oslo (1,096 men and 250 women, 741 workers and 605 staff members). The gingiva around each tooth was divided into four units (mesial, distal, buccal, and lingual), and the presence of gingivitis was charted for each of them individually. A statistical analysis was carried out, and the following conclusions were drawn:

There seems to be no sex difference in the susceptibility to gingivitis, and any difference in the incidence of gingivitis in men and women may be attributed to a difference in local factors, such as

tobacco consumption or oral hygiene.

There seems to be no difference in the susceptibility to gingivitis in workers and staff members. The higher incidence of gingivitis among the workers (as observed in an earlier investigation) may be attributed to the poorer oral hygiene rather than to environmental factors.

Tobacco consumption seems to be an aetiological factor in gingivitis.

The incidence of healthy gingival units is obviously related to the efficiency of toothbrushing, but the toothbrushing does not mentionably improve the gingival health in the interproximal spaces.

The incidence of gingivitis increases with increasing age.

Oral Surgery, Oral Medicine, and Oral Pathology
Vol. 11—June 1958—No. 6.

Tooth Position in Relation to the Denture Base Foundation

LAWRENCE A. WEINBERG, A.B., D.D.S.

More comfortable and longer lasting prostheses are possible if we employ the cross-bite setup where indicated and take cognizance of the various tooth positions as they are related to the denture base foundation. The maxillary anterior teeth may be placed too far labially in relation to the alveolar ridge because of an incorrect arch contour. This causes the maxillary bicuspid to be placed buccal to the residual alveolar ridge. The arch form of the mandibular anterior teeth must conform to the maxillary arch form, thus the error is duplicated. The axial inclination of the posterior natural

teeth places the alveolar ridges in a slight cross-bite relation. Advanced alveolar ridge resorption or surgical procedures tend to increase this cross-bite relationship. Placing the mandibular posterior teeth slightly toward the buccal side of the ridge causes displacement forces and faster alveolar ridge resorption.

Due to the general reluctance to utilize the cross-bite setup, the maxillary teeth are often placed far buccal to the ridge. This causes displacing forces and residual alveolar ridge recession.

The Journal of Prosthetic Dentistry
Vol. 8—May 1958—No. 3

ANNUAL CONVENTION

Canadian Dental Association

QUEEN ELIZABETH HOTEL

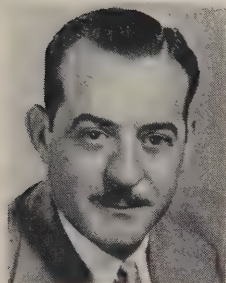
MONTREAL, QUEBEC

OCTOBER 26th — 29th, 1958

DR. CLAUDE W. ADAMS

Subject: "Significant Aspects of Aesthetics for Complete Dentures"

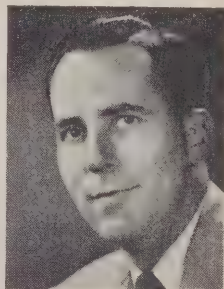
Biography: Dr. Adams was graduated from Iowa University in 1924. From 1927 to 1941 he was a member of the Clinical Department of the Dentists' Supply Company. He was appointed Technical Director in 1943 and at present he is Director of Professional Research for the company. Dr. Adams has conducted courses in Complete Denture Construction in many cities of the United States and Canada.



DR. JAMES D. McLEAN

Subject: "Amalgam"

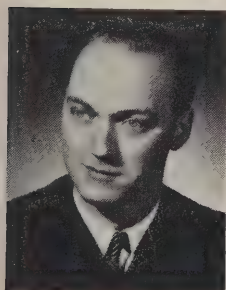
Biography: Dean McLean is a 1942 graduate of the University of Toronto. After service in the R.C.D.C. he undertook post-graduate study in the University of Minnesota during 1946-1947. From 1947 to 1953 he both practised and engaged in part-time teaching at the University of Alberta. He was appointed Professor of Dentistry at Dalhousie University in 1953 and in 1954 became Dean of the Faculty. Dr. McLean is a member of the C.D.A.'s Council on Dental Education, chairman of its Committee on Ethics, and is a Fellow of the International College of Dentists.



DR. GEORGES PELLETIER

Subject: "Management of Routine Cases of Periodontal Disease"

Biography: Dr. Pelletier was graduated from the University of Montreal in 1951. His post graduate study in Periodontics was undertaken at the College of Dentistry, New York University during 1951-1952. At present he is Associate-Professor of Periodontics in the University of Montreal. Dr. Pelletier is a member of both the American Academy and American Institute of Dental Medicine.



DR. VINCENT TREMBLAY

Subject: "Endodontics"

Biography: In 1948 Dr. Tremblay graduated from the University of Montreal, and thence proceeded to post-graduate study in operative dentistry and endodontics at the University of Michigan. He is a past president of "La Société Dentaire de Montréal" and "Montreal Endodontia Society" as well as a past assistant-professor of Operative Dentistry in the University of Montreal. Dr. Tremblay is engaged in a full time practice limited to endodontics and lectures in the subject at the University of Montreal.



La Société dentaire de Montréal will be welcoming you in the most genuine "hospitalité française" and you are invited to register now care of Dr. C. A. Durand, C.D.A. 1958 Convention, 758 Sherbrooke St. West, Montreal 2, Quebec.

EDITORIAL

The Inseparability of Provincial Autonomy and National Interest.

It is generally known that the British North America Act, Canada's constitution, confers upon the various provinces the right to legislate on matters of health and education. In view of this stipulation there is considerable variation among the provinces in respect to pertaining legislation in both fields. Dentistry, as an essential health service, is obviously interested, directly, in legislation which concerns itself with health, and indirectly with that which pertains to education. The provincial dentistry acts place upon the profession the right and responsibility of determining admission requirements and a curriculum of studies, the successful completion of which will provide a registrable qualification in the province. The provinces, through the Dominion Dental Council, the Dental Council of Canada and, latterly, the National Dental Examining Board of Canada have co-operated, admirably, in establishing common standards of educational qualification which apply now, almost universally, in our provinces.

What about the other concern however? One wonders whether our co-operative efforts in respect to health legislation have been all that we might desire.

There was a time when it mattered little to another province the scope or nature of legislation or regulations being pro-

posed or implemented elsewhere. The various provincial governments, themselves, enjoyed almost complete autonomy in this area. Efforts in respect to health insurance, auxiliary services, dental care programs and the like in one of the provinces were of no great concern to the others. The provincial boundaries traversed so easily geographically, were virtually impenetrable, legislatively.

But what of this day in 1958? Do the provinces now suggest that their authority continues undiminished or has there been, perhaps, a more than subtle change?

Since 1948 and the institution of Federal Health Grants there has been, in fact, an increasing participation by the Federal Government in health care. While it is perfectly true that the grants have been administered provincially, one would have to be naive indeed, if he felt that contributions from one government would be given to another without at least some measure of control. "The man who pays the piper calls the tune" is especially applicable to governments.

We have now, however, passed well beyond the Federal Health Grant program. The third phase of health insurance is assured as financial agreements between the Federal Government and many of the provinces have been ratified and health insurance in hospitals

will be an actuality on January first, next. Surely we cannot think that the Federal Government will not be participatingly interested in the regulations encompassing this legislation.

Whether we like it or not this development must necessitate a change in our traditional attitudes towards provincial rights and responsibilities. Activities in one province, very definitely, have a profound effect in others. A dentist, for instance, in Ontario cannot allow himself to believe that efforts by the so-called "public denturists" in Alberta and British Columbia can have no effect on him or that a dentist in Quebec can afford to ignore a post payment plan in Saskatchewan. We are now too closely linked to believe that persuasive precedents in one province will not ultimately reflect themselves in other jurisdictions. Federal Government interest must eventually create certain provincial legislative similarities.

Now this is not necessarily a retrogressive concept. It is a consideration, however, which requires the understanding of the provinces and perhaps, at least, some departure from the original pronouncements of the B.N.A. Act.

There is, unfortunately, a tendency among provincial dental organizations to act unilaterally upon many matters which have national interest. This extends even further as it is not infrequent that certain local dental societies will proceed with projects which their provincial bodies have determined, through, often, years of study, to be inimical to the best interests of the public and the profession.

The ten corporate members of the Canadian Dental Association are provincial legal bodies and thus through their autonomy and legislative authority are able to develop and activate policies or programs which have a direct influence upon the profession and the public in their jurisdictional areas. They are able as well, indirectly, to affect similar groups in other provinces. It is obvious, therefore, that such policies or programs should be sound and be in concert with considerations which have been determined to be in the national interest.

It would seem injudicious and even, perhaps, myopic for a province to proceed independently to develop and activate a program having pertinence to health insurance without first understanding and appreciating the health insurance policies of the Canadian Dental Association which have evolved over more than fifteen years of intensive study by the Health Insurance Studies Committee. Yet, at the present time, there is more than one plan being promulgated which, if activated, would be in conflict with adopted national policy in this area of concern. With respect, we do not believe this is wise procedure.

All groups, through the provincial corporate members, have an opportunity for their proposals to be considered by the Association. It is our view that in the light of increasing Federal Government participation in health matters, the national significance of policies or programs should be carefully considered before they are effected locally or provincially.

SEIZURE OF THOUGHT—I have observed with wonder so many intellectual and literary fashions that I have come at last to rely positively upon one conviction alone. No idea is so antiquated that it was not once modern. No idea is so modern that it will not some day be antiquated . . . To seize the flying thought before it escapes us is our only touch with reality.

Ellen Glasgow, Address to the Modern Language Association.

BOOK REVIEWS

The Physician's Own Library. Prepared by: Mary Louise Marshall. Published by: Charles C. Thomas, Illinois. Pages: 87. Price: \$3.25.

This highly informative and delightful small book is intended for helping physicians to build up their own libraries. It is indeed easy to ascertain that the book will also have appeal to dental practitioners.

Miss Marshall, a qualified librarian in the field, gives excellent ideas and means for the establishment of a library. She discusses, with authority, planning, budgeting, ordering, indexing, and record keeping as well as use and care of books and journals.

The book is well written and contains a considerable amount of information for a work of this size. The chapters on medical papers and case records, provide interesting comments.

The Physician's Own Library was read with pleasure and keen interest, and it is well recommended for students and practitioners.

Colette Gagnon

Full Dentures. Prepared by: Chester Landy, D. M.D. Published by: The C. V. Mosby Co., Pages 182 — 82 illustrations. Price: \$5.85.

It becomes quickly evident, on perusing Chester Landy's new book "Full Dentures", that the aim he sets out to achieve—quoting from his preface "The goal was to write a text which is small in size, readily available as a reference and guide, present a modern technique, and suggest the advances available in full denture construction"—is surely accomplished. In fact a continued quoting from one or two other selected paragraphs found in the preface or introduction would constitute a sufficient review.

This book although small by comparison in size is, nevertheless, not just concise but truly a text. It is so because it deals with or, perhaps better still, spells out principles—"the Principles" of the matter at hand. In orderly march, chapter by chapter, each principle of complete denture pros-

thodontology is expressed literally, is usually summarized, then properly correlated to the text. The result is a brief, forthright, adequate statement of the whole.

It is worthy to note that interesting emphasis is found in certain chapters interspersed throughout the text—for instance the one on Drugs, another on The Single Denture; also, here and there, what might be termed "patient psychology" receives considerable deserving mention. Furthermore it is encouraging to see in this "small" text, rightly following examination and diagnosis, a very just devotion to Treatment Planning, as well as to note the continually interjected emphasis on "the preservation of that which remains".

For those who are looking for a concise, helpful text, Dr. Landy's book, "Full Dentures", will receive an appreciative welcome.

H. W. Hart.

Complete Denture Prosthesis. Prepared by: Daniel H. Gehl and O. M. Dresen. Formerly by: Rudolph O. Schlosser. Published by: W. B. Saunders Co. Pages: 542. Price \$11.00.

This book consists of 24 chapters. It carries over much that was in previous editions, but also introduces considerable new material that brings it up to date. This is an excellent reference book for students and carries many chapters which will be of great interest and assistance to all prosthodontists.

More space might well have been devoted to a discussion of mouth preparation for dentures. Temporomandibular joint disturbances are treated somewhat briefly; their increasing importance would suggest that a full chapter could well have been devoted to this very important subject.

Cleft palate work is another field that is receiving increasing attention. This and a discussion of speech training would seem to fall within the scope of a work of this importance.

This book is very readable and informative and

should find a place in the library of all those interested in prosthodontics.

H. J. Merkeley

A Textbook of Dental Anatomy and Physiology.

Prepared by: Russell C. Wheeler, D.D.S., F.A.C.D. Published by: W. B. Saunders Co. Pages: 413. Price: \$8.50.

The third edition of Wheeler's Dental Anatomy and Physiology follows the same format as the preceding editions. It retains many of its excellent features in the chapters on nomenclature, tooth form and arrangement, dento-osseous structures, and the temporo-mandibular articulation, but as a complete textbook in dental anatomy and physiology it has several discrepancies. The second edition gave some recognition to the importance of the primary dentition. Descriptions of individual teeth are adequate, but it is disappointing to see that no consideration is given to pulp chambers and canals in the present edition. Problems of spacing, growing, and replacement of these teeth by their permanent successors are ig-

nored, and details of occlusion are sketchy. Description of growth and development of the jaws and face is sparse. The addition of chapters on the histology of the teeth and supporting structures, and on growth and development, together with some pruning in the 166 pages of detailed tooth morphology would increase the value of the book as an all round teaching text. Presentation of conflicting views on occlusion would make this subject matter more challenging. Studies of an average tooth form or arch arrangement are valuable, but variations within the normal range could be stressed and brought into their proper perspective.

Dentistry is changing rapidly and it must be kept in mind that dental students will require a broad background for the study of periodontics, orthodontics, and paedodontics as more and more of the sciences and techniques of these specialties are included in the general undergraduate course. This preparation cannot be gained from textbooks which seem to be slanted solely towards the field of restorative dentistry.

A. M. Hunt

THE LIBRARY

Additions

ADAMS, C. P.: The design and construction of removable orthodontic appliances. 2nd ed. Bristol, Wright. 1957. 118 p. illus. \$3.60.

BODINE, R. L.: Implant dentures. (Practical dental monographs, May 1958.) Chicago, Year Book Publishers, 1958. 40 p. illus.

FISHBEIN, M.: Medical writing; the technic and the art. 3rd ed. Toronto, the Blakiston Div., McGraw-Hill Co. Inc., 1958. 262 p. \$7.35.

GLICKMAN, I.: Clinical periodontology; the periodontium in health and disease. 2nd ed. Philadelphia, Saunders, 1958. 978 p. illus. \$17.50.

GREGORY, J. E.: Pathogenesis of cancer. 2nd ed. Pasadena 1, California. Ferment Foundation Publishers. 1952. 202 p. illus.

KLEINER, I. S., & ORTEN, J. M.: Human biochemistry. 5th ed. St. Louis, Mosby, 1958. 808 p. illus. \$9.00.

NESS, F. W., editor: A guide to graduate study; programs leading to the PH.D. Distributed by the American Council on Education. Washington, 1957. 335 p. \$5.50.

NORTHROP, E.: Science looks at smoking; a new inquiry into the effects of smoking on your health. New York, Coward McCann, Inc. 1957. 190 p. \$3.00.

ORBAN, WENTS, EVERETT & GRANT: tice. St. Louis, Mosby. 1958. 537 p. illus. Periodontics; a concept—theory and practice. St. Louis, Mosby. 1958. 537 p. illus. \$14.50.

RATHMANN, D. M.: Vegetable oils in nutrition, with special reference unsaturated fatty acids. Montreal, distributed by the Canada Starch Co. Ltd., 1957. 70 p.

ROCKERT, H.: A quantitative x-ray microscopical study of calcium in the cementum of teeth. Acta Odontologica Scandinavica, Vol. 16, Suppl. 25, 1958. 68 p. illus.

SCOTT, J. H., & SYMONS, N. B. B.: Introduction to dental anatomy. 2nd ed. Edinburgh, Livingstone. 1958. 344 p. illus. \$1.75.

THE ASSOCIATION

ANNUAL MEETING — MONTREAL, 1958

Board of GovernorsOctober 22-25
ConventionOctober 26-29

Winnipeg Public School
Liability Insurance

Amounts payable for dental procedures under the accident insurance plan for Winnipeg public school pupils have been published. Payment is made on the basis of reimbursement for expense incurred in the treatment for injury to sound natural unfilled teeth, provided treatment is performed within 120 days of the date of the injury and commences within 30 days of injury.

Dental injuries will be paid for according to the following schedule, provided the maximum payment for dental injuries occurring in one day shall not exceed \$50.00 if bridgework is not involved, or \$100.00 if bridgework is involved.

Loosened teeth	\$ 5.00
Broken tooth not requiring restoration	5.00
Nerve removal and treatment of canal	15.00
Restoration of broken teeth, per tooth	15.00
Bridgework, for each tooth replaced	30.00
Dental x-ray, one film \$2.00, subsequent	1.50

C.D.A. Retirement Savings Plan

The Retirement Savings Plan, whereby contributions may be deducted in making income tax returns, was established by the Canadian Dental Association in December 1957. An explanatory booklet was issued at that time. A considerable number of members took immediate advantage in order to secure tax deduction for 1957. The Royal Trust Company is trustee of the funds established under the plan.

In order that the membership may be better informed about the advantageous nature of the plan, executive officers of the Royal Trust Company have consented to address local dental societies across Canada. This service will be offered by the trust company and it is hoped that

1958 Convention Registration

All C.D.A. members are being urged to return Convention Registration and Reservation forms NOW. Early indications are that registrations will be heavy. Priority for hotel reservations will be given to those registering earliest.

The first Convention Program brochure has been mailed to all members. Advance information indicates a good program — scientifically and socially. The full program appeared in the June issue of the Journal of the Canadian Dental Association.

Red Cross Thanks Dentists

C.D.A. President Racey has received the following communication from the National Executive Committee of the Canadian Red Cross Society:

"The Central Council of the Canadian Red Cross Society expresses appreciation to the doctors, nurses, dentists, teachers and other professional instructors for the time and effort which they have expended in the various phases of Red Cross activities.
We in the Canadian Red Cross Society are very grateful for the support we received from the members of the dental profession . . ."

Australian Dental Congress

Adelaide, South Australia, will be the scene of the 15th Australian Dental Congress from February 23rd to 27th, 1959.
Any member of the Canadian Dental Association may become a member of the Congress. Write to the Secretary, 15th Australian Dental Congress, 51 Grenfell Street, Adelaide, South Australia, or to C.D.A. Headquarters.

officers of societies will take advantage of this opportunity.

The addresses by trust company men are to be informative and not to be classified simply as salesmanship. In the opinion of the Association the Retirement Savings Plan merits serious consideration of members.

The quarterly statement of unit valuations for the three Funds within the Plan appeared in the July issue of the Journal. It is proposed to publish similar statements regularly as the information is received from the trustee, the Royal Trust Company.

Unit values were established at \$10.00 when the Plan went into operation. As of May 31, 1958, new unit values are as follows:

Government Bond Fund	\$10.198
Corporate Bond Fund	10.160
Common Stock Fund	10.712

Unit values are computed by dividing the net amount of money in each Fund by the total number of units outstanding. The increase in unit values reflects

dividends and interest earned plus changes in the values of investments held. Money entering the Plan during the current quarter, which ends August 31st, will purchase units at the new values shown above.

Pan American Dental Congress

Sponsored by the Mexican Dental Association, the Pan American Dental Congress will be held at Mexico City from November 18th to 23rd.

Canadian dentists wishing information about the Congress should write to Dr. Roberto E. Woodworth at the M.D.A., Sinaloa No. 9, Mexico 7, D.F., Mexico. Travel and hotel information is available from Mr. Joe D. Howard, Medical Arts Bldg., 1715 Pacific Avenue, Dallas 1, Texas, U.S.A.

From The Press

"London — (AP) — The House of Commons approved increases of National Health Service assessments by £24,000,000 a year to keep the program out of the red."

FACULTY OF DENTISTRY — ALUMNI DAY

FRIDAY, NOVEMBER 28th, 1958

Faculty of Dentistry, 230 College St., Toronto

PROGRAM:

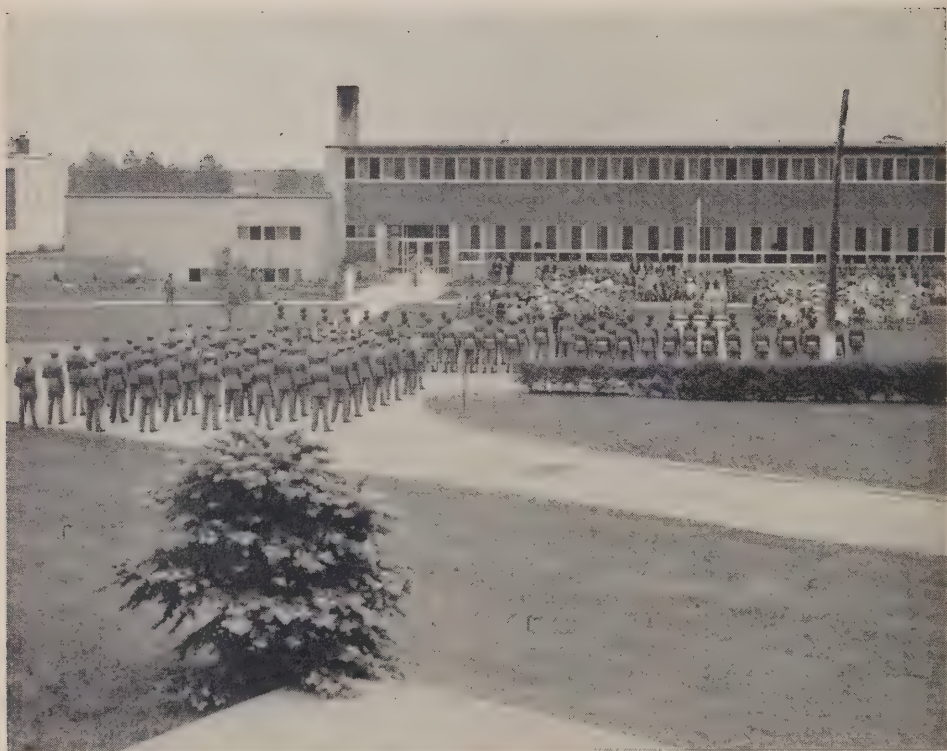
- "Radiographic Interpretations"—Dr. George A. Morgan
- "Is topical application of stannous fluoride practical and effective?"—Dr. Ralph C. Burgess
- "Endodontics in preventive dentistry"—Dr. George C. Hare.

LUNCHEON—Chez Paree—Address—Dean Roy G. Ellis.

- "Case Reports"—Dr. Albert A. Antoni.
- "Table Clinics"—Staff members of Paedodontic and Orthodontic Departments.

All members are urged to attend this event.

THE CORPS



Department of National Defence—Army Photo

R.C.D.C. SCHOOL, CAMP BORDEN, OFFICIALLY OPENED.

R.C.D.C. School Officially Opened

The Royal Canadian Dental Corps School at Camp Borden, Ontario was officially opened by the Honourable George R. Pearkes, V.C., Minister of National Defence, on June 13, 1958, in the presence of a distinguished group of service and civilian guests.

Called on by Colonel B. P. Kearney, M.B. E., C.D., Commandant of the School, Brigadier E. M. Wansbrough, Director General of Dental Services, welcomed the guests and introduced the Minister in the following words:

"We heartily welcome you here this afternoon, and are gratified and highly honoured

by your presence on this occasion. This is a proud and memorable day in the history of the R.C.D.C.

Scattered as we are throughout the Armed Forces of Canada, at home and abroad, in isolated detachments, the members of the R.C.D.C. have very little opportunity of getting to know each other and welding that esprit-de-corps, so essential in any military force. This building which we officially open today affords us a suitable place and environment. Here, under ideal conditions, we hope to develop for both officers and other ranks, the skills, techniques and knowledge which will allow us to perform our allotted task of providing the highest standard of military dental service for the Canadian Navy, Army and Air Force.

Military dentistry is very little different in its professional and technical aspects from routine civilian dentistry. However, it must



Department of National Defence—Army Photo

SENIOR OFFICERS IN ATTENDANCE AT R.C.D.C. SCHOOL OPENING

L. to r. Air Marshal Hugh L. Campbell, Chief of the Air Staff, R.C.A.F.; Surgeon Captain G. W. Chapman, Deputy Medical Director General, R.C.N.; Brigadier K. A. Hunter, Director-General Joint Medical Services; Brigadier E. A. Wansbrough, Director-General Dental Services; The Honourable George R. Pearkes, V.C., Minister of National Defence; Colonel B. P. Kearney, Commandant, R.C.D.C. School, Camp Borden; Air Vice-Marshal J. G. Bryans, Air Officer Commanding, Training Command R.C.A.F.; Major General S. F. Clark, General Officer Commanding, Central Command, and Brigadier W. A. B. Anderson, Acting Adjutant-General.

be so regulated and administered in any military situation that it will be made readily available wherever our Forces happen to be located. It must be of such scope as to prevent dental suffering, promote dental health, and assure a minimum loss of duty time by our troops. The training of personnel, both professional and non-professional, the proper assignment of such to assure the full utilization of each individual's talents, the provision of suitable working locations with the best military equipment, are the factors which govern the successful practice of military dentistry. We are much indebted to the authorities who have helped make our aim possible, by the erection of this building.

At this time, it is my distinct privilege and pleasure to introduce, that most distinguished

soldier and parliamentarian, The Honourable George Randolph Pearkes, V.C., C.B., D.S.O., M.C., M.P., Minister of National Defence, who has graciously consented to officially open our School."

The Minister's reply, in part, was as follows:

"I thank you very sincerely for the honour you have conferred upon me by asking me to open the School.

I have special reasons to value this link with your Corps because I have vivid memories of the suffering the men of my battalion in the First World War had to put up with owing to the shortage of Army dentists. If I remember correctly the establishment provided

one dentist to each Field Ambulance, and that would work out to about one dentist for each 5,000 men or more.

Yours is a Corps devoted entirely to the alleviation of suffering, to improvement of health, and so to the greater efficiency of the serviceman. It is your responsibility to attend to the dental needs in peace and war of all our defence forces, whether the man fights in the air, on land or on sea. Owing to the many commitments the Canadian Armed Forces are now called upon to fulfil, the conditions under which you must operate vary greatly; you may work under the ideal conditions of this School, comparable to those available at a great base or general hospital, where the latest equipment is available; you may find yourselves working under the difficult conditions of a forward dressing station, where men suffering from terrible head wounds require attention, and you may have available only the facilities provided by a mobile dental lorry. I trust that this School will always remember that its students must train to work under active service conditions.

It is my experience that the members of your Corps are held in high regard by all of the three Armed Services. This respect has grown over the years and is fully justified. It must be a real satisfaction for you to know that it exists. I know something of the demands upon your time, the service members of your Corps give to soldier, sailor and airman. I realize also, the effort that must be made for you to keep abreast of new developments and procedures introduced into dentistry by scientific progress.

Because of the unique position of your Corps in relation to the Armed Services and the confidence in which you are held by all, you have unusual opportunities to demonstrate by example the highest standards of integrity and loyalty.

My best wishes attend the endeavours of each officer, man and woman, on the staff of the School. I know your Corps, the Services, and in fact the profession of dentistry will benefit through the establishment of this School."

Prior to the official addresses and the ribbon-cutting ceremony the Minister inspected a guard of honour under the command of Captain C. A. Casterton, C.D., of the School Staff.

Throughout the opening ceremonies and the inspection of the School by the official party and guests, music was provided by the Royal Canadian Air Force Training Command Band.

A garden party at the Royal Canadian Army Medical Corps Officers' Mess followed, with the Royal Canadian Dragoon Band in attendance. The guests were given the opportunity of hearing the new official Royal Canadian Dental Corps March with Captain J. M. Gayfer, the composer and Bandmaster of the Canadian Guards Band, Camp Petawawa, as guest conductor.

In the evening, official guests, officers of the Corps, and their ladies, concluded a memorable day with a buffet supper and dance in the R.C.A.M.C. Officers' Mess.

Senior Officers of the Armed Forces in attendance were:

Air Marshal Hugh L. Campbell, Chief of the Air Staff, R.C.A.F.; Major General S. F. Clark, General Officer Commanding, Central Command; Air Vice Marshal J. G. Bryans, Air Officer Commanding, Training Command, R.C.A.F.; Air Commodore C. F. Johns, Assistant Deputy Minister, Construction Engineering and Properties Division; Air Commodore A. A. G. Corbet, Director General of Medical Services, R.C.A.F.; Brigadier W. A. B. Anderson, Acting Adjutant-General; Brigadier K. A. Hunter, Director General Joint Medical Services; Surgeon Captain G. W. Chapman, Deputy Medical Director General, R.C.N.; Colonel J. O. A. Perron, Commander, Camp Borden; Colonel G. L. Morgan Smith, Commandant, The R.C.A.M.C. School; Group Captain F. R. West, Commanding Officer, R.C.A.F. Station, Camp Borden; Colonel L. E. Sarantos, Commandant, The R.C.A.S.C. School.

The Canadian Dental Association was represented by Dr. D. W. Gullett, Secretary, the Faculty of Dentistry, University of Toronto, by Dr. R. G. Ellis, Dean, and The Ontario Dental Association by Dr. F. H. Shepherd, Past President and Dr. C. L. Strachan, President.

Queen's Honorary Dental Surgeons Appointed

The Honourable George R. Pearkes, V. C., Minister of National Defence has announced that, Her Majesty Queen Elizabeth II, has graciously approved the appointments of four senior officers of the Regular and Militia components of the Royal Canadian Dental Corps as Queen's Honorary Dental Surgeons.

Reappointed as Queen's Honorary Dental Surgeon:

Brigadier Elgin McKinnon Wansbrough, O.B.E., M.M., E.D., C.D., Q.H.D.S., D.D.S., F.I.C.D., F.A.C.D., Director General of Dental Services, of Ottawa and Shelburne, Ontario.

Appointed Queen's Honorary Dental Surgeons for tenure of office:

Colonel Kenneth Martin Baird, O.B.E., C.D., D.D.S., F.I.C.D., Deputy Director General of Dental Services, of Ottawa.

Colonel Gordon Benjamin Shillington, C.D., D.D.S., B.Sc., F.I.C.D., Senior Consultant, Office of the Director General of Dental Services, National Defence Headquarters, of Ottawa and Blenheim, Ont.

Appointed Queen's Honorary Dental Surgeon for a two-year period:

Colonel James Patterson Whyte, E.D., D.D.S., F.I.C.D., Canadian Army (Militia), of Swift Current, Sask., and Eganville, Ont.,

Assistant Director of Dental Services, Dental Advisory Staff, Prairie Command, Winnipeg.

**Lt. Col. Covey Commanding Officer
at Metz, France**

Army Headquarters has announced that Lt.-Col. G. R. Covey, M.B.E., C.D., Royal Canadian Dental Corps, of Toronto, has been appointed Commanding Officer of 35 Field Dental Unit (R.C.A.F.), Metz, France. His appointment took effect in June. Lt.-Col. Covey has been with 15 Dental Company in Montreal since 1956. He will be accompanied by his family.

Officers on Supplementary Reserve

The following officers have been transferred to Supplementary Reserve:

Captain M. A. Harquail; Captain R. Laba; Captain M. C. Stroud.

Captain McDonald Promoted

Army Headquarters has announced the promotion of Captain J. C. E. McDonald to the rank of Major effective 1 June 1958. Major McDonald, a native of Amherst, N.S., served in the Royal Canadian Army Medical Corps from November 1943 to September 1945 in both Canada and the United Kingdom.

Following demobilization Major McDonald enrolled in the Faculty of Dentistry, Dalhousie University in 1946, graduating in 1950 and after a short period of private practice, he was commissioned in the Royal Canadian Dental Corps 28 May 1951.

Major McDonald has served in both Eastern and Western Canada as well as for a three-year tour with the Air Division in France.

He is currently employed at R.C.A.F. Station, Gimli, Manitoba, where he resides with his wife and two children.

GENERAL NEWS

**Tax Regulations Liberalize Rules on
Education Expenses**

New income tax regulations confirming the right of dentists to deduct certain educational expenses were issued by the Internal Revenue Service of the U.S., recently. In substance, the regulations specify how a business or professional person may deduct costs, including travel expenses, associated with educational courses that are designed to keep him abreast of his field and improve his skills, such as so-called refresher courses. The ruling, however, would not apply to courses intended to advance a general practitioner into a specialty area in which he has not been engaged. The regulations are retroactive for four years.

**Headquarters Established For Survey
On Dentistry**

Headquarters were established recently for the comprehensive two-year survey of dentistry, being conducted by the American Council on Education. The address of the

headquarters is 700 N. Michigan Ave., Chicago 11. Dr. Byron S. Hollinshead, former president of Coe College who is director of the survey, has been assembling a staff and preparing a work plan for the survey. The work plan will be presented for approval to the Commission on the Survey of Dentistry, composed of outstanding representatives of education, industrial, labour and health fields, at a meeting of the commission to be held June 18-19 in Chicago. The chairman of the commission is President Arthur S. Flemming, of Ohio Wesleyan University, who was nominated by President Eisenhower recently as successor in the cabinet to Marion B. Folsom, secretary of health, education and welfare. The dentists members of the commission are Dr. Otto W. Brandhorst, of St. Louis, secretary of the American College of Dentists; Dr. Willard C. Fleming of San Francisco, dean of the School of Dentistry, University of California; Dr. Don W. Gullett, of Toronto, Secretary of the Canadian Dental Association, and Dr. Percy T. Phillips of New York, president-elect of the A.D.A.

THE PROVINCES

ALBERTA

University of Alberta

The Faculty of Dentistry of the University of Alberta was host recently to Dr. Henry Beyron of Stockholm, Sweden, who conducted a two-day seminar for the members of the faculty, joined by the Edmonton Periodontic Study Club.

Dr. Beyron is on a world tour and has completed a series of lectures in Australia and the United States.

While in Australia, in conjunction with Professors Campbell and Barrett of the University of Adelaide, Dr. Beyron carried out a number of studies of the teeth of the Australian aborigines. This work is a further extension of Dr. Beyron's investigations into the changes that take place in civilized human dentitions that he had been carrying out over the past 20 years in Sweden.

Dr. Beyron observed that the coarse diets and lack of tooth decay in the primitive tribes of Australia resulted in slow wearing away of the teeth. Adult members of the tribes retained all their natural teeth throughout their lifetime, with little or no deposits of tartar on them and with little or no loosening of the teeth as is seen in most civilized countries.

Dr. Beyron pointed out that only with the recent advances in the knowledge of anatomy, biochemistry and physiology, have some of the unanswered problems in clinical treatment been solved. Dr. Beyron reviewed many of the problems that are still under intensive investigation in many universities from the dental status of the teen-ager to those patients who are wearing complete dentures.

BRITISH COLUMBIA

Golf Tournament

In spite of pessimistic forecasts the annual spring golf tournament of the Vancouver and District Dental Society, held at the Gleneagles Golf and Country Club on May 15, was a success.

Gleneagles is only a nine-hole course, but although there was a little waiting on the second round, nobody seemed to care as it was a beautiful day and some of the stories told on the tees were exceptional, and so was the fellowship.

Everybody enjoyed the golf, especially Gerry Splatt of the B.C. Dental Supply Company who shot a hole-in-one on the 17th, a 187-yard par 3. It was his first hole-in-one, and it is hoped he has many more because his entertainment on the 19th hole was bountiful.

After a delightful dinner at the golf club, Dr. Orville Wright welcomed the golfers in the absence of the President Max Nacht.

The prize-winners were as follows: The low gross was won by Dr. S. Moscovich after he and Dr. M. Krasnoff tossed for the Leach Shield. Thus Dr. Krasnoff, winning the second low gross, was presented with the B.C. Dental Supply trophy. Both had a 79 gross. Dr. A. Campbell was 3rd low gross with 81.

The low net was won by Dr. Doug Seale who received the Ash Temple cup with replica. Closest to the pin was Dr. Sid Corman, the long drive was made by Dr. Bill Paterson, the best nine by Dr. Waterman; the visitor's prize was won by Gerry Splatt and the B.C. Laboratory Association prize by Eddie Albert.

Victoria and District Dental Society

Introduced by Dr. Arthur Poyntz, Dr. Harry Brown, Dental Consultant to the Department of National Health and Welfare, gave a short address at the May meeting. Dr. T. W. James then introduced Mr. Peter Dunn, president of the B.C. Chamber of Commerce who spoke on "The Chamber of Commerce in Our Community". In an interesting short talk, Mr. Dunn mentioned that the Chamber is against all forms of state medicine and dentistry, and represents the last stand of free enterprise against the encroachment of the bureaucrats. Many society members joined the Chamber of Commerce on the spot. The president thanked both speakers.

Dr. T. W. James delivered his presidential report on a very successful season. Worthy

of note was a new record of sixty-nine paid-up members.

The following officers were elected for the 1958-9 season: President, Dr. Roy A. Johnson; President-elect, Dr. David Parfitt; Secretary, Dr. W. G. Dempsey; Treasurer, Dr. G. B. Cranstoun; Directors, Drs. W. G. Hall, W. Douglas McDougall and R. R. Ross.

Prince George and District Dental Society

In June the society was fortunate in having Dr. Arthur Hayes of Vancouver give a clinic on orthodontics. His presentation was excellent and much appreciated.

The meeting was followed a few days later by the annual fish derby, when the full membership went to beautiful Stuart Lake for two days of fishing and good fellowship. Dr. Denny Waller won the pool for the largest lake trout (6 lbs.), and Dr. Jack Newby for the best rainbow trout. Dr. Bill Aitken caught only two fish but the trip became a success when he made a grand slam at bridge.

D. H. M.

MANITOBA

Winnipeg Dental Society

The final meeting of the Winnipeg Dental Society for the 1957-1958 clinical season featured a "Home Talent" Program. Once again it was very evident to the many who attended that there is a great wealth of talent and knowledge within our own Society.

The morning was opened by the presentation of two papers — given by Dr. A. Shinoff on Periodontics — and Dr. H. Kahanovitch on Prosthodontics.

The next two hours were filled by a variety of table clinics as listed below:

- (1) Dr. T. J. Cooke—Impression materials in Operative dentistry.
- (2) Dean J. Neilson—Periodontics.
- (3) Dr. J. Passalis—Emergency treatment in anaesthesia.
- (4) Dr. J. Burstein—Space maintainers.
- (5) Dr. H. Kahanovitch—Choice of teeth for dentures.
- (6) Dr. A. Buchanan — Maxillo - Facial Prostheses.

- (7) Dental Corps—Radiation Hazards.
- (8) Dr. H. Fleishman—Jacket crown preparation.
- (9) Manitoba Dental Health Services Display.
- (10) University of Manitoba Dental School—Proposed plans.

Following the noon luncheon and business meeting the afternoon session consisted of panel discussion groups on different subjects. These provoked a great many questions from the floor and created a lot of general discussion which was an indication of their interest to all the members.

The subjects discussed and the panel members were:

Nutrition in Dentistry—Dr. G. Campbell—Chairman. Dr. W. Campbell, Dr. P. Goldberg, Miss D. Baxter.

Ancillary Help in Dentistry—Dr. I. Jackson—Chairman. Dr. Z. Kasloff, Dr. S. Katz, Dr. D. Proctor, Dr. W. Shorthill.

High Speed in Operative Dentistry—Dr. J. Snidal—Chairman. Dr. L. Kahane, Dr. K. Routley, Dr. P. Jackin, Dr. S. Norquay.

The noon luncheon featured the presentation of a Dental Health playlet by twenty-eight Grade V children. This play was written mainly by Dr. C. McCormack the Director of Dental Services for Winnipeg Schools for the different schools to present during Children's Health Week. This particular class had presented it on Television and to the Teachers' Convention and did an excellent job which was greatly appreciated by all Society members.

The annual business meeting contained several high-lights:

- (1) Election of officers for the 1958-1959 season resulted as follows: Dr. Averbach—President; Dr. J. P. Beattie—Vice-President; Dr. G. W. Danzinger—Clinic Chairman; Dr. C. Rusen—Secretary-Treasurer; Dr. G. Merkeley—Committee member; Dr. R. Wallace—Committee member; Dr. S. Norquay—Committee member.
- (2) Presentation to Dr. Wm. MacKenzie and Dr. H. Merkeley of inscribed buffalo statuettes for outstanding service to the Society.
- (3) Presentation of inscribed gavels to the men who had served as President of the Society for the years 1937 to 1948.

Thus another successful year was written into the annals of the Winnipeg Dental Society. The executive members are to be

congratulated on the quality of the clinicians who spoke at the meetings and for the efficient way the work of the Society was carried out. The members as a whole are to be congratulated for their faithful attendance at the meetings and their interest in Society affairs. It is this combination which has in the past and will in the future make the Winnipeg Dental Society outstanding in relation to all similar bodies throughout the Dominion.

J. P. B.

Librarian Appointed to New Faculty

Miss Doris Erfle, B.A., B.L.S., has been appointed Librarian to the Faculty of Dentistry of the University of Manitoba. Miss Erfle graduated in Arts from the University of British Columbia and in Library Science from the University of Toronto. Since her graduation, Miss Erfle has worked in libraries in Vancouver, Moose Jaw, and in the general library of the University of Manitoba. The Librarian will be responsible for the organization, and for the collection of library material.



DR. HAROLD W. HART
Professor of Prosthodontics
Faculty of Dentistry, University of Manitoba

Dr. Harold Hart Appointed Professor of Prosthodontics

Dr. H. H. Saunderson, President of the University of Manitoba, announced recently that Dr. Harold W. Hart has been appointed Professor of Prosthodontics and Chairman of the Department of Prosthodontics in the new Faculty of Dentistry of the University of Manitoba. Dr. Hart is a native of British Columbia and a 1940 honours graduate of the University of Oregon Dental School.

Following graduation, Dr. Hart joined the Royal Canadian Dental Corps in which he served in Canada, the British Isles, Italy and Northwest Europe. Following the cessation of hostilities, Major Hart remained in the army, and he recently retired from the Corps after some eighteen years of service. During the latter part of his military career, Major Hart did considerable post-graduate work in the field of Prosthodontics at the National Institute of Health, Bethesda, Maryland, following which he assumed the position of Chief Instructor in the Royal Canadian Dental Corps' School in Ottawa and later in Camp Borden. It was from this post that Major Hart retired before accepting his position at the University of Manitoba. Dr. Hart took up residence in Winnipeg in May of

this year in order to prepare for the opening of dental classes in the Fall of 1958.

NEW BRUNSWICK

Dr. Leger Receives Honorary Degree

Dr. Leo Oswald Leger of Saint John, New Brunswick, received, in June, an honorary degree of Doctor of Science from Saint Joseph's University. At the closing exercises Dr. Leger gave the address in both French and English to the graduation class. Dr. Leger was himself an undergraduate of Saint Joseph's from 1909 to 1915. He later graduated from the University of Montreal in dentistry in 1919. Two other dentists were granted similar honorary degrees a few years ago. They were Dr. A. J. Coughlan of Saint John who was given a Doctor of Science degree and also Dr. A. J. Cormier of Moncton, who was granted an honorary Doctor of Philosophy degree.

J. F. E.

NOVA SCOTIA

Faculty Plans Double Celebration

Plans are being prepared to celebrate the 50th Anniversary of the Faculty of Dentistry, Dalhousie University, and the official opening of the new Dental Building, September 25th and 26th next.

There will be a University Convocation on Thursday afternoon, September 25th, at which honorary degrees will be conferred on distinguished dentists. This will be followed by the ceremony of the official opening of the new building, a tour of the building, and a reception.

The Nova Scotia Dental Association will be hosts at a reception, dinner and dance at the Nova Scotian Hotel, that evening.

For the benefit of the dentists coming to share the celebration, Dr. John H. Barr, Professor of Oral Diagnosis and Roentgenology, and Director of Clinics at the School of Dental Medicine of Tufts University, has been invited to present a program on the morning and afternoon of Friday, September 26th.

No plans have been made for the Friday evening, for it is felt that most people would prefer an opportunity to renew old acquaintances and friends, and that some classes might wish to arrange reunions.

J. D. McL.



DR. EGIL HARVOLD
Professor of Orthodontics
Faculty of Dentistry, University of Toronto

ONTARIO

Essex County Dental Association

At the general meeting of the Essex County Dental Association the new executive was elected and installed. The following are the elected members: President, Dr. D. C. Wickens; Vice-President, Dr. W. J. Pritchard; Treasurer, Dr. J. W. Wilson, and Secretary, Dr. L. J. Schiller.

L. J. S.

Dr. Harvold Appointed Orthodontic Head, Toronto

Dr. Egil P. Harvold, a Norwegian, has been appointed head of the Department of Orthodontics in the University of Toronto's Faculty of Dentistry.

Dr. Harvold is an internationally famous cleft palate specialist who studied at the University of Leipzig and the Norwegian

State Dental School, and majored in Anatomy in his Ph.D. program at the University of Oslo.

From 1952 to 1954 he was research worker in the Cleft Palate Centre of the Hospital for Sick Children, Toronto. For the past four years Dr. Harvold has been associated with the Norwegian State Dental School, and has carried on a private practice in Oslo.

Hamilton Dental Association

The Hamilton Dental Association began the second half of its program in January by welcoming Dr. P. G. Anderson, who has been a frequent guest speaker in Hamilton. Dr. Anderson gave his usual excellent lecture, describing new techniques in crown and bridgework recommended for shorter and fewer appointments.

On January 25th the annual dance was held in the Royal Connaught Hotel under the supervision of Dr. and Mrs. P. T. Smyl-ski. The association was honoured to have Dr. F. H. Shepherd, President of the O.D.A., and Mrs. Shepherd as patron and patroness.

In February Dr. S. H. Payne of the University of Buffalo gave an afternoon and evening session on full denture prosthesis. At the March meeting, Mr. Thomas Woodhouse lectured on the history of the City of Hamilton, and at the same meeting Honorary Memberships were presented to Dr. W. Weadick, Dr. G. Allison, Dr. M. C. Tindale, Dr. J. E. Dores, and Dr. T. Ingram.

For the final meeting of the year, the membership was fortunate to have Dr. Miles R. Markley of Denver, Colorado, for an evening and all day meeting. Dr. Markley discussed a wide variety of subjects in the general practice of dentistry and gave the members ample evidence of the practical skill and versatility that have made him one of the most widely travelled lecturers today.

R. H. F.

QUEBEC

Montreal Dental Club

The Annual Spring Golf Tournament of the Montreal Dental Club was held under a bright sun and gentle breezes on June 7th, at the Knowlton Golf Club in the Eastern Townships. 35 were present.

After 18 holes, score cards showed that Dr. A. J. Schutz and Club President Dr. R. F. Harvey were tied for low gross, and a gallery of members watched as Dr. Harvey emerged victorious from a two hole play-off. 1st. low net was captured by Dr. W. Kowal, and 2nd. low net by Dr. T. Postans. The monkey golf this year was won by Dr. Roy Dohn.

A new trophy—The Senior Members Trophy—was generously donated by the College of Dental Surgeons of the Province of Quebec, and Dr. Victorien Dubé, the President of the College, was on hand Saturday night to award it personally to winner Dr. Ed. Molloy.

W. D. S.

YOU CAN MIX BUSINESS WITH PLEASURE!!

at the

SASKATCHEWAN DENTAL ASSOCIATION CONVENTION

REGINA, SEPTEMBER 1 - 3, 1958

Doubt my word? The Saskatchewan Dental Association has planned a program which will banish any elements of disbelief—a program to prove that you can mix business with pleasure. And you are cordially invited to attend.

The S.D.A. has two main aims; to further your knowledge of dentistry, and to entertain you in the grand old "western style". To effect this first aim there will be a most informative convention and refresher course in oral surgery, to be held in Regina, September 1-3, 1958.

We are very fortunate in having as our guest clinician Joseph A. Ludwig, D.D.S., M.S., M.D., F.I.C.S. Dr. Ludwig did undergraduate work at the University of Manitoba, University of Minnesota, University of Alberta, and at the University of California. He completed medical training at Guy's Hospital Medical School, London, England, and received his M.D. degree at the Royal College, London. He was elected a fellow of the International College of Surgeons and a member of the Society of Maxillo-Facial Surgery. He is at present practising Plastic and Oral Surgery in Winnipeg and is associated with the St. Boniface General, Victoria and Misericordia Hospitals.

Also highlighting the convention will be addresses by such distinguished guests as Hon. Walter Erb, Provincial Minister of Health, and Dr. J. M. Neilson, Dean of the new Manitoba dental school.

The fee schedule will be one of the important subjects for discussion in the business session along with the possible dissolution of the S.D.A. and suggested increased membership to the Council.

For entertainment, a professional football game will be held on the afternoon of Monday, September 1st. This will be followed by a cocktail party. For those attending from out of town, this football game will be included in the registration fee. Your wife is also invited to attend. For her entertainment a program has been planned which will include such events as a fashion show, luncheon and dinner dance.

Come and enjoy yourself at the Holiday weekend. Meet your old friends, make new acquaintances, and further your knowledge of Oral Surgery.

J. B. Sweeney, D.D.S.

IN MEMORIAM

John Fleming Reynolds—Dr. John Fleming Reynolds of Toronto, died on June 14th, 1958.

He was born in Apsley, Ontario and received his early education in Peterborough. Dr. Reynolds graduated from the Royal College of Dental Surgeons of Ontario in 1924. He practised in Apsley from 1924 to 1925, Whitby, 1925-1929 and Toronto 1929 to 1958.

Dr. Reynolds was a school teacher from 1917 to 1920.

He is survived by his three sisters, Gladys, Ruth and Lois.

Max Kates—Dr. Max Kates of Toronto, Ontario, died on Saturday, July 21st at New Mount Sinai Hospital on his 73rd birthday.

Born in Europe, Dr. Kates moved at an early age to New York City where he grew up on the Eastside. Dr. Kates attended the Royal College of Dental Surgeons of Ontario from which he graduated in 1912. During his undergraduate days, he was assistant to the late Dr. Harvey Robb. When he graduated he began his practice at Queen and McCaul Sts., in Toronto.

Dr. Kates was known in camping circles as being the founder with his wife of the first and largest children's co-ed summer camp, Camp Arrowhon, in Alognquin Park. He was a member of the Oakdale Golf Club, the Primrose Club and Holy Blossom Temple.

Surviving are his wife, Lillian, a son, Eugene, a daughter, Mrs. S. Solway, a brother Hyman and a sister, Mrs. B. Rose, all of Toronto.

Dennis Barkoff—Dr. Dennis Barkoff of Windsor, Ontario, died on April 30, 1958.

He was born in Montreal in 1902 and received his early education in Fort William, Ontario. He graduated from the Royal College of Dental Surgeons of Ontario in 1924 and practised in the Grace Hospital, Detroit from 1927 to 1928, and from 1928 to 1958 in Windsor.

Dr. Barkoff was secretary of the Windsor Zionist Society, 1930 and president of the Windsor Chess Club 1938 to 1940.

R. J. Beattie Bayne—Dr. R. J. Beattie Bayne of Sarnia, Ontario, died suddenly on Saturday, July 5th, 1958. He was 59.

Dr. Bayne was born in Fergus, Ontario. He graduated from the Royal College of Dental Surgeons of Ontario in 1923.

Dr. Bayne served in the First World War and was with the Canadian Dental Corps during the Second World War. He was a member of the Lambton County Dental Association and of the Masonic Order of Fergus. He had practised dentistry in Sarnia since 1946 and was previously located at Preston and Elora.

Surviving are his wife, Margaret, a daughter Jean, three sisters, Mrs. S. J. Phillips, Miss J. Bayne, and Mrs. E. H. Bryan, and a brother, Dr. J. R. Bayne.

A. L. Purdy—Dr. A. L. Purdy died in Halifax on May 8th, in his 86th year.

Surviving are his three daughters, Isabelle, Eva, and Ella, and five sons, Frank, Jack, George, Luman and Gordon also a sister, Gussie.

Paul Hutzulak—Dr. Paul Hutzulak of Toronto, Ontario, died on June 5th 1958.

Dr. Hutzulak graduated from the Faculty of Dentistry, University of Toronto in 1926. He practised in Winnipeg from 1926 to 1943 and from 1943 to 1958 in Toronto.

Surviving are his wife, Dorothy, daughter, Mrs. J. M. Currie, son, Paul, and sister, Mrs. Y. Kunynsky.

Herbert Fergusson Blair Black—Dr. Herbert Fergusson Blair Black of Toronto, Ontario, died on June 30th at his home. He was 66.

Dr. Black practised in Toronto for 43 years. During the Second World War he was an RCAF dental officer at Jarvis. In recent years he conducted a dental clinic at Mercer Reformatory.

He was a member of St. Anthony's Church and of the Knights of Columbus.

Surviving are his wife, Frances, two daughters, Mrs. J. Calarco and Georgina, a son Allan, and a brother Dr. Neil Black.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th - 29th
1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 4th - 7th
1961	Saskatoon, Saskatchewan	June 25th - 28th

1967 Toronto, Ontario
*(Centennial Celebration
of Dentistry in Ontario)*

FUTURE EVENTS

Date	Function	Location	Officer	Address
Aug. 27-Sept. 4, 1958	46th Annual Meeting International Dental Federation	Brussels, Belgium	Dr. M. Joachim, Secretary	67 Rue de Treves, Bruxelles, Belgium.
Sept. 1-3, 1958	Saskatchewan Dental Association Convention and Refresher Course in Oral Surgery	Regina, Sask.	Dr. G. W. Schwann, Registrar	613 McCallum-Hill Bldg., Regina, Sask.
Sept. 5-6, 1958	N.O.D.A. Convention	Kirkland Lake, Ont.	Dr. J. R. Jeffery	Suite 4, Korman Block, Kirkland Lake, Ont.
Sept. 12, 1958	Toronto & District Dental Golf and Dinner	Scarboro Golf and Country Club	Dr. G. A. Paterson	3349 Dundas St. West, Toronto 9, Ont.
Sept. 14, 15, 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. J. D. Lyon	500 Albert St., Kingston, Ont.
Sept. 25 & 26, 1958	Official Opening of New Dental Building	Dalhousie University, Halifax, N.S.	Dean J. D. McLean	Dental Bldg., Dalhousie University, Halifax, N.S.
Nov. 1, 1958	Annual Meeting—New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.
Nov. 18-23, 1958	Pan American Dental Congress	Mexico City	Dr. Roberto M. Ruff	Sinaloa No. 9, Mexico 7, D.F., Mexico.
Nov. 25-29, 1958	Convention of the Odontological Federation of Central America—Panama	University of Costa Rica, San Jose, Costa Rica	Dr. R. Pauly, Secretary	Apartado Postal 698, San José, Costa Rica, C.A.
Dec. 8-12, 1958	Greater New York, Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.
Feb. 23-27, 1959	15th Australian Dental Congress	Adelaide, South Australia	The Secretary	15 Grenfell St., Adelaide, South Australia.
Mar. 29, 30, 31, 1959	Fifth National Dental Congress of Cuba	Havana, Cuba	Dr. Claudio Cornell	Colegio Estomatologico Nacional, Calle L, 353, Vedadd, La Havana
May 31-June 3rd, 1959	Western Canada Dental Society Convention	Banff, Alberta	Dr. C. S. Lea, Secretary	708 Greyhound Bldg., Calgary, Alberta

TUFTS UNIVERSITY SCHOOL OF DENTAL MEDICINE Postgraduate Refresher Courses

High Speed Instruments in Operative Dentistry—October 17-18, 1958.
Operative and Nutritional Procedures for the Management of Rampant Caries—November 10-11, 1958.
Oral Roentgenology—November 19, 1958.
Clinical Endodontics—Six Fridays—November 7, 14, 21, 28, December 5, 12, 1958.
Cephalographs and Diagnosis—January 14, 15, 16, 1959.
Crown and Bridge Prosthesis Participation Course—8 days—January 30, 31, February 6, 7, 13, 14, 21, 28, 1959.
Orthodontic Principles of Interest to the General Practitioner—Eight weeks February 4, to March 25, 1959.
Oral Pathology for the Oral Surgeon—Each Thursday afternoon for nine weeks from February 5 through April 2, 1959.
Full Denture Implants—April 6-10, 1959.
Occluso-Rehabilitation I Lecture and Seminar Course—April 20-24, 1959.
Oral Roentgenology—April 22, 1959.
Clinical Dentistry for Children—June 15-16, 1959.
For further information write to: Dr. I. Glickman, Director, Division of Graduate and Postgraduate Studies, 136 Harrison Ave., Boston, Massachusetts.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Etude sur les mesures préconisées pour le diagnostic buccal et leur répercussion sur le plan de traitement

par CLAUDE MARANDA, D.D.S., Montréal

La plupart de ceux qui font appel aux services du chirurgien-dentiste le font dans un but bien déterminé: se faire examiner ou traiter les dents. Mais le dentiste ne doit pas oublier, comme l'a dit T. Robinson, que "la bouche est une unité, non une série de dents individuelles", et que "le patient est un tout organique et une personnalité". Il doit donc s'efforcer de le connaître et mettre tout en oeuvre pour déceler les maladies buccales qui peuvent l'atteindre. Pour y parvenir, il faut qu'il recueille, par des méthodes appropriées, un ensemble de renseignements qui lui permettent d'établir *un diagnostic*, basé

sur la logique, l'expérience et sur ses connaissances médicales. A l'aide de ce diagnostic, il peut arriver au but cherché: établir *un plan de traitement*, pour soulager et guérir le malade. T. Robinson a résumé les méthodes de diagnostic dans une équation:

Lésion → histoire + examen clinique + Rayons-X + (examens de laboratoire) + raisonnement = **diagnostic**

Mesures préconisées pour le diagnostic des maladies buccales

Interrogatoire ou histoire du patient:

C'est la première étape du diagnostic.

Données de routine:

On note d'abord son nom, son âge, sa profession, sa race.

L'âge joue un rôle important. Il faut se rappeler que les enfants présentent une sensibilité plus grande à la carie et qu'il faut faire des examens plus fréquents.

Chez les vieillards, nous savons que la fréquence des maladies malignes augmente; il faudra donc, même chez les édentés complets, faire des examens périodiques des tissus.

L'occupation du patient pourra nous expliquer certains symptômes.

L'exposition à des températures trop élevées pourra favoriser la formation de névralgies faciales chez les cuisiniers, par exemple⁽⁴⁾. Le froid, chez les porteurs de glace, a pu être responsable d'arthrite temporo-maxillaire⁽²⁾.

Signalons les aërodontalgies d'origine endo-pulpaire, qui surviennent chez les aviateurs débutants, au cours de la montée; ces symptômes apparaissent surtout dans les dents mortifiées ou atteintes d'inflammation chronique⁽²⁾. "Le cancer des marins", siégeant aux lèvres, est huit fois plus fréquent chez les marins des Etats-Unis que chez les autres personnes⁽³⁾. L'ingestion ou l'inhalation de substances nuisibles⁽¹⁾ ou même de produits non toxiques, par simple action mécanique,⁽⁴⁾ peuvent affecter directement la muqueuse ou les dents. Parfois, les lésions semblent subordonnées à la réaction de l'état général, tel que dans l'intoxication chronique par le plomb. On peut également noter des changements de teinte de l'émail et de la dentine à cause de la pénétration des poussières métalliques, chez les ouvriers travaillant dans un atmosphère saturé⁽⁵⁾. Les poussières abrasives peuvent produire une abrasion de toutes les surfaces d'occlusion⁽⁶⁾.

Certaines professions déterminent des habitudes qui font apparaître des "stigmates professionnels"⁽⁴⁾, tels "les dents de tapissiers" ou "les dents de couturière".

Ces quelques exemples, rapportés en grand nombre par les différents auteurs, montrent l'importance qu'il faut donner à la profession du patient pour faire le diagnostic d'affections que l'on ne saurait autrement expliquer.

L'occupation peut influencer notre plan de traitement. Dans certains métiers, l'esthétique joue un rôle important . . . Par contre, les disponibilités financières du patient s'opposent à certains genres de restaurations . . .

La race du patient peut nous mettre sur la piste de maladies générales, qui, inconnues du dentiste, pourraient lui faire commettre des erreurs thérapeutiques graves. Il faut penser, par exemple, à la prédisposition des Juifs pour le diabète; des Indiens d'Amérique, pour la tuberculose. Aux Indes, l'habitude de mâcher du bétel engendre souvent chez les indigènes des carcinomes buccaux⁽¹⁾.

De plus, au point de vue dentaire, certains races présentent plus de caries que d'autres. Au retour d'une mission scientifique dans le Groenland, Le Mehaute et Tcherniakofsky ont pu écrire: "la carie dentaire, exceptionnelle chez les Esquimaux de race pure, semble être de règle chez les métis" . . .

Donc, ces questions de routine peuvent guider très utilement notre *diagnostic étiologique*. Nous pourrions, quand c'est possible, *supprimer la cause*. Dans le cas contraire, il nous faut *éduquer* chaque patient en particulier et le public en général: établir des normes de prévention dans les industries, supprimer certaines habitudes, instituer une diète équilibrée, enseigner les mesures d'hygiène indispensables à un bon équilibre physique.

Après avoir noté ces renseignements, il nous faut laisser parler le patient. Ensuite seulement, nous le questionnerons pour avoir une histoire aussi complète que possible de son cas. Le patient sera porté à nous parler d'abord de sa maladie actuelle: c'est la deuxième étape de notre plan de diagnostic.

Histoire de la maladie présente:

Le patient nous énumère parfois des *symptômes généraux*, tels que nausées, étourdissements, maux de tête. Il aura pu

constater une élévation de température . . .

Mais, le plus souvent, son attention est surtout attirée par les *symptômes locaux* qu'il a remarqués. Parfois, il nous consulte pour une enflure extra ou intra-orale, pour une lésion buccale. Mais le signe le plus fréquent signalé au chirurgien-dentiste est la douleur dentaire. Après avoir mentionné sa douleur, le patient, n'a pas l'habitude d'en préciser la nature. Ce facteur est pourtant essentiel pour orienter le diagnostic du chirurgien-dentiste. C'est à nous, à ce stade, d'orienter l'interrogatoire pour obtenir une description aussi exacte que possible des sensations douloureuses: date et circonstances d'apparition; sont-elles provoquées ou spontanées, diurnes ou nocturnes, localisées ou irradiées, spontanées ou provoquées, etc.?

En quoi une telle précision dans la description de la douleur peut-elle aider le diagnostic du chirurgien-dentiste?

—D'abord, en localisant le douleur. Néanmoins, il ne faut pas accorder plein crédit aux indications du patient; il faut se méfier des "synalgies" dento-dentaires, c'est-à-dire que le patient accuse une autre dent que la dent causale et d'ordinaire une dent antérieurement soignée⁽⁷⁾.

Il est utile de connaître la *cause*, qui déclanche la douleur et sa durée; par exemple si le froid provoque la douleur, nous savons que la pulpe est irritée, mais vivante; et si cette douleur persiste pendant plusieurs minutes, nous penserons à une pulpite. Si, au contraire, la douleur s'éveille au contact du chaud et se calme au froid, on peut penser plutôt à un abcès alvéolaire . . .

Ainsi la douleur est un symptôme important mais malheureusement difficile à interpréter. D'ailleurs, il faut remarquer que le patient n'aura pas toujours noté le facteur en cause. Nous avons déjà parlé des synalgies, cause d'erreurs. De même, la douleur peut être irradiée. En outre, des douleurs maxillaires et dentaires peuvent provenir d'autres parties du corps, dans la syphilis et l'angine de poitrine, par exemple⁽²⁾. Il y a également des névroses . . .

La douleur, par son caractère subjectif, est très difficile à interpréter. Les sensations prêtent à des erreurs fréquentes. Chacun interprète ses symptômes selon son tempérament, sa sensibilité personnelle. Les uns sont démonstratifs, les autres flegmatiques. L'éducation, la race et la santé interviennent. Il faut se rappeler aussi que certaines régions sont beaucoup plus douloureuses que d'autres. La partie antérieure de la cavité buccale est beaucoup plus innervée que la partie postérieure.

Il est donc essentiel de vérifier objectivement les impressions du patient par un certain nombre de tests; mais pour compléter l'interrogatoire, il faut obtenir des renseignements supplémentaires sur son passé médical, personnel, et familial.

HISTOIRE MEDICALE:

Maladies antérieures et actuelles:

"La bouche est le casier sanitaire de l'enfant" a dit Capdepon. Il faut rechercher des troubles généraux, chaque fois que des dysplasies, ou un état dystrophique des dents temporaires et permanentes attirent l'attention afin de mettre en oeuvre un traitement approprié: vitaminique, recalcifiant, antisypilitique . . .⁽⁴⁾

De même, certaines maladies pourront expliquer certains symptômes: par exemple, on rencontre très fréquemment des gingivites chez les diabétiques. La "langue de Hunter" est révélatrice des grandes anémies . . .

Il faut également s'assurer que le patient ne souffre pas de maladies contraindiquant des traitements courants en chirurgie dentaire. C'est ainsi qu'il ne faut pas procéder à des extractions dentaires chez un diabétique qui n'est pas sous contrôle médical. Il y a, danger à opérer, hors de l'hôpital, une personne atteinte de maladie hémorragique.

Quand une personne souffre de maladie à l'état aigu, il ne faut entreprendre que les traitements susceptibles d'améliorer cet état.

Maladies familiales:

Certaines maladies, telle l'hémophilie, sont d'une importance primordiale pour

le dentiste puisque la moindre intervention chirurgicale pourrait avoir de graves conséquences.

Parfois, notre diagnostic peut s'établir d'une façon plus certaine par la connaissance d'une anomalie héréditaire; par exemple, si une dent est absente, nous pouvons poser le diagnostic de dent incluse ou d'anodontie partielle. Si l'interrogatoire révèle qu'un des parents souffre de la même anomalie, nous devons opter pour la deuxième hypothèse.

Nous pouvons, de plus, nous renseigner sur la tendance familiale aux maladies périodontiques, à l'immunité ou à la fréquence de la carie.

Déficiences nutritives:

Nous pouvons penser à une mauvaise nutrition, si nous nous trouvons en face d'un enfant qui souffre de carie généralisée ou à répétition. Si l'interrogatoire nous révèle une nourriture riche en sucres et en farineux, nous devons fixer une diète plus appropriée.

EXAMEN CLINIQUE:

"En raison des complications locales et générales que présentent les affections dentaires, on ne peut entreprendre l'examen de la denture sans songer à l'ensemble de l'organisme. En pratique courante, après l'interrogatoire, doit comprendre l'examen cervico-facial avant de regarder à l'intérieur de la cavité buccale"⁽⁵⁾.

Examen extra-oral:

L'examen clinique doit suivre un plan bien déterminé.

Il commence par une *inspection extra-orale*, qui nous renseigne sur les asymétries ou les lésions du visage.

C'est la *palpation*, qui nous renseigne sur la température du visage et la consistance de la déformation, sur l'existence et l'intensité des douleurs qu'elle provoque au toucher, sur sa mobilité par rapport aux plans superficiels et profonds . . . sur l'état des ganglions . . .

Notre traitement se base sur le diagnostic étiologique de ces *déformations*:

s'il s'agit d'un développement musculaire excessif, dû à de mauvaises habitudes masticatoires, il faudra les corriger. Parfois, il faut avoir recours à la chirurgie et à l'orthodontie, dans les asymétries infantiles congénitales, les ankyloses temporo-maxillaires unilatérales, etc. . . .

Mais, le plus souvent, nous avons affaire à un oedème. Là encore, les causes sont multiples et pour instituer un traitement approprié, le premier point est d'établir un diagnostic causal. Il faudra d'abord déterminer si l'oedème est accompagné ou non de signes inflammatoires. S'il n'y a pas d'inflammation, il s'agit peut-être de manifestations allergiques, d'oedème de Quincke ou encore de phénomènes divers, tels que engelures, etc.

Mais souvent, nous nous trouvons en face d'un oedème inflammatoire aigu. Le tissu cellulaire s'infecte fréquemment par des lésions du voisinage, dont les plus habituelles sont les affections dentaires. Néanmoins il faut connaître les signes cliniques, pour éviter des erreurs de diagnostic: par exemple, si on décèle sur la joue une plaque douloureuse surélevée, entourée d'un bourrelet, avec un point douloureux par excellence (symptômes de l'érysipèle), il faut éliminer la cellulite dentaire puisqu'elle se manifesterait par des limites imprécises, sans bourrelet et avec un maximum douloureux en regard de la dent causale⁽⁷⁾.

L'inspection nous permet également de découvrir les *lésions* du visage; un diagnostic précoce d'ulcération cancéreuse peut sauver une vie humaine. La syphilis, également, peut-être dépistée au début; il ne faut pas oublier que le plus fréquent des chancres extra-génitaux est le chancre buccal et que ce dernier siège le plus souvent au niveau de la lèvre⁽⁴⁾.

Il est nécessaire, en présence d'une fistule, d'en découvrir la cause: ganglionnaire, alvéolaire, et "ne pas méconnaître la cause dentaire de la fistule, sinon des curettages osseux s'avèrent inutiles. L'avulsion de la dent causale guérit, en quelques jours, une fistule qui dure depuis des mois"⁽⁷⁾.

Examen intra-oral:

Après l'examen de la face, il faut passer à l'examen intra-oral.

Observons le patient pendant qu'il ouvre la bouche, pour voir s'il existe une déviation mandibulaire, du trismus, ou si l'ouverture est difficile ou exagérée.

Une vue d'ensemble nous renseigne sur l'hygiène buccale du patient, par la présence ou l'absence de tartre, de racines, de lésions de caries non traitées.

Étudions *l'état des maxillaires* et recherchons *les altérations possibles des tissus mous*, par l'inspection, la palpation et, si nécessaire, par l'exploration.

Remarquons les déformations des parois osseuses, ou les lésions de la gencive. La plupart des affections radiculaires, comme des lésions alvéolaires, s'extériorisent au niveau de la gencive. Prenons le cas d'un kyste radiculaire: pendant sa "période inactive", l'accroissement progressif de cette tumeur bénigne déforme la paroi alvéolaire externe. Le visage n'est pas déformé mais, à l'examen intra-oral, la vue et le doigt perçoivent, sous une muqueuse saine, une tuméfaction intra-osseuse, mal limitée, tendant à combler le sillon vestibulaire. Pendant sa "période d'extériorisation", le kyste pourra s'ouvrir à la muqueuse et occasionner une fistule.

L'exploration est nécessaire en certains cas, pour suivre un trajet fistuleux, ou pour apprécier la profondeur des culs-de-sac gingivaux (détail important pour le traitement).

Il faut également examiner le plancher, la langue, la face interne des joues pour y découvrir les lésions suivantes: plaque de leucoplasie, lichen plan, chancres, etc.

La palpation met en évidence des lésions tumorales qui auraient pu échapper au contrôle de la vue.

Nous arrivons maintenant à l'examen de l'occlusion et de la denture.

Une occlusion traumatique peut expliquer une gingivite ou une résorption osseuse.

Chez les enfants, des articulés incor-

rects nécessitent un traitement orthodontique.

Quant à l'examen de la denture, il doit être conduit systématiquement:

—les couronnes seront examinées avec la sonde pour découvrir les caries;

—l'état de la pulpe sera évalué par l'observation de la sensibilité aux agents thermiques et électriques;

—la mobilité des dents, la douleur que provoque la percussion nous renseignera sur l'état du ligament.

Nous voyons donc que l'ensemble des renseignements recueillis par l'examen clinique est considérable; il est indispensable, mais il ne saurait être jugé comme suffisant.

En effet, dans le cas du kyste précédemment cité, la radiographie aurait été d'un grand secours pour le découvrir dans sa "période inactive" et permettre ainsi de le traiter à son tout début.

Une complication d'origine dentaire est généralement causée par une dent; cependant, il ne faut pas ignorer certaines localisations plus rares et, par exemple, ne pas accuser les prémolaires, même si elles sont atteintes de gangrène pulpaire, à la place de la dent de sagesse dans l'abcès migrateur de Chompret et l'Hirondel.⁽⁶⁾

La recherche des caries, avec l'explorateur, sans examen complémentaire ne permet pas de déceler toutes les cavités à leur début. "Les défauts tissulaires qui admettent des bactéries sont souvent 1/5 de la taille d'un cheveu", et "les explorateurs sont cinq fois plus épais qu'un cheveu"⁽⁷⁾. L'explorateur ne permet pas d'atteindre toutes les caries interproximales.

Il faut également se méfier de la réponse des dents aux agents thermiques: "on reproche aux tests thermiques de n'être guère précis. Il arrive en effet que dans certains cas, lorsqu'il s'agit de dents dites hypercalcifiées, comme on en voit assez souvent chez les arthritiques, on ne peut obtenir aucune réaction, ni par la chaleur ni par le froid, alors qu'il s'agit de dents saines"⁽⁸⁾.

Le diagnostic clinique est fait par analogie: il est basé sur les signes et les symptômes d'une maladie. Il devrait être fait avec réserve. En effet, plusieurs affections présentent les mêmes signes cliniques et nécessitent un traitement différent. Par exemple, les stomatites ulcéreuses sont très fréquentes. Poser le diagnostic de ces stomatites n'est qu'un point du problème; il importe d'en connaître la cause grâce au récit et aux doléances du patient ou à l'analyse de signes objectifs (médicamenteuse, co-existence du malade avec des porteurs de bacilles, etc.)

Parfois, dans certains cas, il faut faire des:

Examens complémentaires:

La ponction d'une tumeur, que l'on pense être un kyste, aspire du liquide. Dans le cas contraire, il s'agit d'une tumeur solide⁽⁹⁾.

En cas d'infection, il peut être utile de faire un examen bactériologique pour connaître la sensibilité du microbe aux différents antibiotiques.

Pour localiser la source d'une douleur obscure, on peut se servir d'anesthésie locale comme guide diagnostique⁽¹⁾.

Il y a indication de faire une biopsie "toutes les fois qu'en présence d'une lésion accessible, il est impossible de formuler un diagnostic certain;"⁽¹⁰⁾ lorsqu'il est impossible cliniquement d'écarter le diagnostic de tumeur maligne; chaque fois qu'on envisage une opération mutilante, même si le diagnostic du néoplasme paraît évident⁽¹¹⁾; quand, après un traitement indiqué, une lésion ne guérit pas dans une limite de temps raisonnable.

On peut citer aussi, comme moyens de diagnostic, les moulages, les modèles d'étude, les photographies, surtout utiles en orthodontie et en dentisterie restaurative.

EXAMEN RADIOGRAPHIQUE:

L'examen radiologique a pris une importance de tout premier ordre dans la pratique médicale et dentaire. "Aucun

diagnostic n'est complet sans radiographie"⁽¹²⁾. Thomas Robinson écrit: la radiographie est très utile pour "découvrir, confirmer, classier, définir, localiser une lésion".

Il est bien rare, en effet, dans l'examen radiologique intra-oral systématique que l'on ne découvre pas quelques états pathologiques: petites caries interproximales, fractures radiculaires inconnues du patient... La radiographie peut révéler des maladies, dépourvues de symptômes et qui, découvertes à un stade précoce, seront plus faciles à traiter. "C'est souvent la radiographie, et la radiographie seule, qui décèle un foyer infectieux"⁽¹³⁾.

Parfois, elle permet d'éveiller l'attention du praticien sur des conditions obscures et l'incite à de nouvelles recherches. Par exemple, si nous nous trouvons en présence d'une déformation minime de la mandibule, sans cause apparente, et si la radiographie nous révèle une destruction osseuse étendue, nous pourrions, bien que le cas soit rare, suspecter un épithélioma du maxillaire inférieur⁽¹⁴⁾.

Certains diagnostics cliniques, tel que la possibilité de dent incluse, sont confirmés par la radiographie.

L'aspect radiographique de la lésion nous permet peut-être de la classier. "La radiographie apporte un appoint précieux à la clinique pour préciser la nature des lésions": le processus kystique refoule l'os excentriquement, et donne sur le cliché une image arrondie limitée par un contour net; "un processus inflammatoire aigu ou subaigu détermine une image de décalcification à contours flous"⁽¹⁴⁾.

Il est certain que la radiographie est indispensable pour localiser une lésion et qu'aucune opération chirurgicale, aussi minime soit-elle, ne devrait être entreprise sans cette aide précieuse.

D'abord, la radio renseigne sur l'étendue de l'attaque tissulaire; elle nous fera la situation exacte de la lésion, ce qui est particulièrement intéressant dans le cas possible d'infection périapicale soupçon-

née par les examens précédents, mais qui pourrait être provoquée par plusieurs dents douteuses. Il est également essentiel de connaître la localisation de la lésion par rapport aux points anatomiques importants, tels que position par rapport au sinus, au canal dentaire . . .

Il existe de méthodes de radiographie employées plus rarement:

La sialographie qui "se propose, grâce à l'injection d'un liquide opaque aux Rayons-X, d'obtenir des renseignements précis sur tout le système salivaire"⁽⁴⁾.

La téléradiographie, qui "se propose d'obtenir une image de profil des os du crâne et de la face, et des parties molles qui les entourent, rend de grands services en orthodontie"⁽⁴⁾.

On voit l'importance de tout premier ordre que possède l'examen radiographique dans l'établissement du diagnostic et du traitement. Il est même indispensable, dans la plupart des cas. Mais il ne faut pas tomber, non plus, dans la tendance qu'ont certains professionnels de penser que l'on peut faire le diagnostic complet d'un cas sans procéder à d'autres examens⁽¹⁾; ainsi une congestion pulpaire n'est pas décelable aux Rayons-X; l'image de la pulpe est la même, qu'elle soit saine ou non. ⁽¹⁵⁾

Certaines superpositions peuvent nous induire en erreur, d'où l'importance des radiographies prises sous des angles différents. Par exemple, un oedème des tissus recouvrant le sinus maxillaire peut simuler aux Rayons-X une sinusite maxillaire, bien que les sinus soient sains"⁽¹⁶⁾. Des ombres peuvent provoquer des erreurs. Ainsi des lyses situées gingivalemment, à la jonction émail-cément, sur les dents postérieures, ne doivent pas être prises pour des caries interproximales. ⁽¹⁵⁾

Il faut également se méfier des diagnostics radiographiques rapides; certaines tumeurs des mâchoires apparaissent aux Rayons-X comme des altérations kystiques et seule la biopsie permet de les différencier⁽¹⁾. Comme le dit Genestet, "il faut savoir ce que peut nous donner la radio, et ne pas lui demander davantage." Ce qui nous amène à comprendre qu'il faut interpréter la radio à la lumière des découvertes cliniques et des autres tests. "Si elle est indispensable, elle n'a qu'une valeur relative; en cas de désaccord entre la radio et la clinique, cette dernière doit l'emporter".

AUTRES EXAMENS:

Il y a un grand nombre d'examens de laboratoire que le dentiste ne peut pas faire au bureau. S'il juge qu'une analyse du sang ou des urines de son patient est nécessaire, il doit immédiatement l'envoyer consulter un spécialiste. Dans les hôpitaux, ces examens sont d'ailleurs pratiqués avant toute intervention chirurgicale et avant l'anesthésie. Il faut se rappeler que l'albumine est quelquefois présente dans les urines d'un patient qui présente une infection dentaire marquée.⁽¹⁾

Par contre, il est des tests que le dentiste peut faire au bureau et qui donnent des renseignements précieux.

Le dentiste peut, à l'aide d'un papier buvard, après avoir incisé le lobule de l'oreille ou le bout du doigt du patient, *préciser le temps de saignement*; de plus, en recueillant du sang dans un tube capillaire, il peut *noter le temps de coagulation*.

Des tests bactériologiques se font fréquemment en cabinet, notamment dans les cas d'obturation de canaux.

Le dentiste peut faire *des tests d'allergie*, pour savoir si celle-ci est provoquée par les matériaux dentaires. "Les gingivites et autres lésions buccales sont souvent associées à des réactions allergiques, causant une sensibilisation aux protéines. On a suggéré des tests non seulement sur la peau, mais aussi sur la gencive pour déterminer le facteur étiologique".⁽¹⁾

CONCLUSIONS:

De cette étude sur les mesures préconisées pour le diagnostic des maladies buccales il résulte qu'aucune méthode, prise isolément, ne saurait nous permettre de poser un diagnostic précis. "Les diagnostics clinique, radiologique, pathologique . . . sont tous des essais en eux-mêmes. Ce n'est qu'après avoir obtenu, analysé et soumis à une *pensée logique* tous les renseignements que l'on peut faire un diagnostic final"⁽¹⁾. Enfin, le diagnostic n'est pas tout. Il faut établir le plan de traite-

ment. Et, cette partie de notre travail n'est pas toujours facile. Elle exige des connaissances étendues, "une image mentale claire, une pensée logique et les deductions correctes"⁽¹²⁾.

Une fois en possession de tous les renseignements, il nous faut faire un *diagnostic différentiel*, c'est-à-dire qu'il faut faire "la distinction entre les maladies semblables en comparant leurs symptômes et leurs signes". Prenons le cas d'un patient qui vient nous consulter à la suite d'un traumatisme sur les dents. Plusieurs cas peuvent se présenter. S'il y a déplacement et mobilité du fragment, le diagnostic se pose entre la fracture radiculaire basse et la luxation. Des "nuances cliniques" peuvent orienter le diagnostic: la douleur à toute tentative de mobilisation indique une fracture; il en est de même du degré de la mobilité (bien que cette dernière constatation pourrait être due à une lésion alvéolaire associée). Le diagnostic de fracture était souvent difficile avant l'ère de la radiographie qui, maintenant, confirme ou infirme les résultats de l'examen clinique⁽¹⁸⁾.

Quelquefois, le diagnostic est plus difficile à établir parce qu'il sera *multiple*, c'est-à-dire qu'il y a association de plusieurs lésions, exigeant plusieurs traitements. T. Robinson rapporte le cas d'un homme de 68 ans, porteur d'une prothèse, qui vient consulter pour des douleurs dans la partie muqueuse édentée de la région molaire droite. De plus, sa langue est épaisse, fissurée . . . Cliniquement on fait un diagnostic de lichen plan et de glossite; on prescrit de la vitamine B. Cependant, ce traitement ne donne pas les résultats espérés. Un examen plus attentif révèle des prothèses défectueuses. Il faut se méfier des diagnostics hâtifs.

Une fois le diagnostic posé, il faut suggérer un *plan de traitement* en indiquant l'ordre et la valeur de ses diverses phases. Comme nous l'avons vu, avant de choisir le plan de traitement, il faut, quand c'est nécessaire, demander l'avis du médecin traitant.

Nous devons avoir pour règle de soulager le patient, avant tout autre traitement.

Le "type du patient", son âge, sa profession influenceront parfois notre traitement.

En tenant compte de ces facteurs, nous sommes prêts à établir le plan de traitement: à la première visite, après nous être renseignés sur l'histoire du patient, nous ferons l'examen buccal, nous prendrons des radiographies. Si c'est nécessaire, nous prendrons les empreintes pour établir les modèles. Puis nous pourrions faire une prophylaxie.

À la deuxième séance, nous confronterons les résultats obtenus et nous établirons le diagnostic. "Ce n'est que par la confrontation et l'interprétation judicieuse des signes recueillis au cours d'un examen systématique qu'un diagnostic précis pourra être posé"⁽⁸⁾. Puis nous traiterons les maladies buccales, nous pratiquerons les extractions nécessaires, nous ferons les traitements dentaires. La prothèse sera, en général, faite en dernier sauf pour les dents antérieures en raison de l'esthétique.

Mais il faut bien savoir que, même après avoir fait le diagnostic et institué le traitement, si celui-ci n'apporte pas d'amélioration au patient, il faudra refaire un diagnostic encore plus poussé qui est appelé *diagnostic post-opératoire* ou *post-thérapeutique*. Cependant, un grand nombre d'échecs thérapeutiques sont la conséquence d'un examen insuffisant. Il faut donc prendre comme règle de ne jamais entreprendre de traitement sans avoir formulé un diagnostic précis.

BIBLIOGRAPHIE

(1) K. H. Thoma et H. B. G. Robinson — Oral and dental diagnosis with suggestions for treatment (pages 1 jusqu'à 108).

(2) Galarpeau — Encyclopédie médico-chirurgicale: maladies professionnelles (pages 22089: 1 jusqu'à 6).

(3) S. Peller et C. S. Stephenson: id.: Rf: Irritation cutanée et cancer dans la marine des Etats-Unis. American Medical Sc.

(4) M. Dechaume: — Précis de stomatologie: lésions buccales, dentaires, et maxillaires dans les maladies professionnelles (page 715).

— Encyclopédie médico-chirurgicale: examen clinique général (pages 22000).

— Précis de stomatologie: syphilis de la cavité buccale (pages 598-603).

(5) M. Petri: Encyclopédie médico-chirurgicale: maladies professionnelles. Rf: les intoxications (Henke et Lubarsch).

(6) I. Schour et B. G. Sarnat: Id: Manifestations buccales d'origine professionnelle (J.A.M.A.) 12 décembre 1942.

(7) C. Ruppe: Séméiologie des affections de la bouche et des dents:

—séméiologie des algies d'origine dentaire (pages 28 à 31).

—séméiologie des affections de la région jugale (p. 178-81).

—fistules cutanées d'origine dentaire (pages 79-80).

(8) M. Fleury: La pratique stomatologique (collection Chompret): Examen du malade (pages 32 à 42).

(9) M. Bercher: La pratique stomatologique (Pathologie dentaire):

—accidents de dent de sagesse (pages 353-4).

—les tumeurs des mâchoires (pages 442 . . .).

(10) Darier: Encyclopédie médico-chirurgicale: La biopsie (page 22114).

(11) Cernea: Encyclopédie médico-chirurgicale: La biopsie.

(12) Black (volume 1): Diagnostic oral. Examen de la bouche (pages 1 à 14).

(13) Housset: collection Chompret.

(14) M. Raison: Le pathologie buccale (collection Chompret): affections des maxillaires.

(15) McCall et Wald: Clinical Dental Roentgenology.

(16) M. Lacaille: Collection Chompret: lésions traumatiques des dents (Pages 196- 205-208).

Nouvelles de l'Association

REUNION ANNUELLE de 1958, à MONTREAL

Bureau des Gouverneurs — du 22 au 25 octobre

Congrès — du 26 au 28 octobre

Tarifs de faveur pour le transport au Congrès annuel

Les compagnies de chemin de fer canadiennes et la compagnie Trans-Canada offrent des tarifs de faveur aux dentistes qui se rendront à Montreal pour le Congrès annuel en octobre prochain. Pour profiter de ces billets à prix réduits, on doit présenter au moment de l'achat, un certificat spécial qu'on peut obtenir en écrivant au:

Secrétaire
Association dentaire canadienne
234, rue St-Georges
Toronto 5

CHEMIN de FER: dates permises pour le départ vers Montréal:

Des gares l'ouest—de n'importe quel endroit situé à l'ouest de Fort Williams et Armstrong, Ontario: du 16 au 24 octobre inclusivement.

Des gares de l'est—de Fort Williams et Armstrong, Ontario, et de tous les endroits situés à l'est ces deux places, excepté Terrebonne: du 15 au 23 octobre inclusivement.

TRANS-CANADA:

De tout aéroport du Canada, le voyage doit commencer en dedans des 15 jours précédant le dernier jour du Congrès (le 29 octobre).

Les billets de retour de Montréal doivent être utilisés en dedans des dix jours suivant le 29 octobre.

On peut obtenir tous les renseignements nécessaires des compagnies de chemin de fer ou de Trans-Canada au moment d'organiser le voyage.

Attractions du Congrès de 1958

Pour la première fois à un Congrès de l'Association dentaire canadienne, les congressistes pourront bénéficier d'un système de traduction simultanée pour toutes les séances scientifiques et les assemblées de l'Association. L'assistance pourra utiliser des écouteurs installés aux fauteuils. Un expert traduira soit en anglais, soit en français toute les paroles prononcées au cours d'une conférence. Cette traduction simultanée sera surtout profitable aux dentistes de langue anglaise qui pourront comprendre l'exposé d'un des conférenciers, le Docteur Pierre Cernéa, de Paris, France, qui présentera une communication sur les "Epithéliomas du plancher de la bouche et du maxillaire inférieur—diagnostic et traitement". Cette conférence sera suivie d'une discussion de groupe.

Des conférenciers offerts aux sociétés dentaires locales pour expliquer le plan d'Epargne-Pension de l'A.D.C.

L'Association dentaire canadienne avait établi son plan d'assurance-pension en décembre 1957. Par ce plan, l'assuré peut déduire de son revenu le montant de ses primes. A cette époque, l'Association publia un fascicule contenant des renseignements à ce sujet. Un nombre considérable de dentistes prirent avantage de ce plan pour déduire leurs primes dès 1957. Le Royal Trust Company agit comme fiduciaire des fonds accumulés d'après ce plan.

Pour renseigner davantage les dentistes sur les avantages de ce plan, les directeurs du Royal Trust ont consenti à donner des conférences devant les membres des sociétés dentaires par tout le Canada. Les officiers des sociétés devraient profiter de cette offre qui leur est faite gracieusement par la compagnie. Ces causeries visent à donner des explications et non à pousser la vente. L'Association croit sincèrement que le plan d'Epargne-Pension mérite sérieuse considération.

Nomination à la faculté de Dalhousie

Le docteur Alexander Eli Hoffman vient d'être nommé comme assistant-professeur en chirurgie buccale à la faculté de chirurgie dentaire de l'Université de Dalhousie. Le docteur Hoffman, qui consacrera tout son temps à l'enseignement, poursuit des études post-universitaires depuis la fin de ses études dentaires en 1953, grâce à des bourses du Comité des Recherches de l'Association dentaire canadienne et de la Fondation Kellogg.

Après avoir brillamment terminé ses études à Dalhousie, le docteur Hoffman a étudié un an à l'Université Tufts de Boston et ensuite à l'Hôpital Henry Ford de Détroit. Le docteur Hoffman est né à Saint-Jean, Nouveau-Brunswick.

Plan de responsabilité publique en Ontario

Le Collège Royal des Chirurgiens-Dentistes de l'Ontario a accepté en principe un plan d'assurance-groupe de responsabilité publique. Ce plan, qui sera très bientôt en activité, couvrira la responsabilité professionnelle et celle des locaux.

La protection offerte par ce plan sera plus considérable que celle actuellement donnée par les contrats individuels à primes égales. Ce plan comporte deux avantages insignes: la compagnie ne peut pas annuler l'assurance d'un individu et il n'y a pas limite d'âge. Cette police protège non seulement le dentiste, mais aussi ses employés quand ils travaillent pour lui dans son cabinet.

Renseignements sur l'art dentaire en Hollande

Population: 11,000,000
Nombre de dentistes: 2,500
(15% de femmes)
Proportion: 1/4800

Dentisterie sociale

Le système d'assurance-santé de la Hollande ressemble à celui du Danemark; il est basé sur un Fonds de Maladie. Depuis longtemps, cette formule d'assurance contre la maladie était facultative, mais, par la loi de 1941, elle devint obligatoire pour tous les citoyens gagnant moins d'un certain revenu. Aujourd'hui, cette mesure sociale créée pour obvier aux ennuis pécuniaires amenés par la maladie protège environ 80% de la population. Les assurés ne doivent pas gagner plus de 7000 florins par année; ceux-ci et leur famille sont protégés contre la maladie et l'hospitalisation; de plus, ils sont indemnisés pour l'achat des médicaments et les déboursés occasionnés par l'entretien de leur dents.

Les soins dentaires sont donnés *gratuitement* aux enfants jusqu'à l'âge de 21 ans et pour les cas d'urgence des adultes. Les citoyens de plus de 21 ans paient une partie des frais suivant une liste d'honoraires fixée à l'avance. Par exemple, si une obturation coûte 4 florins et demi, le patient débourse 1 florin et demi et la solde est payée par le fonds.

Particularités

Le plan hollandais accorde une prime aux gens qui donnent à leurs dents des soins réguliers. Pour un patient qui visite le dentiste tous les six mois, les obturations sont faites gratuitement; il doit toutefois payer s'il a besoin de dentiers. Si le patient néglige sa visite bi-annuelle, il doit faire remettre ses dents en bon état à ses frais avant d'être admis de nouveau dans le plan. Les statistiques actuelles montrent que 25% de la population entretient ses dents en bon état. Même si ce pourcentage n'est pas très élevé, on peut dire qu'il est encourageant. L'on estime que 17% de la population porte des dentiers; de plus, les enfants au-dessous de 6 ans ne sont pas compris dans ces calculs. Voilà un des faits importants du plan de santé dentaire hollandais. La profession en est heureuse ainsi que tous les intéressés: on se rend compte après plusieurs années de l'efficacité de ce système. Les citoyens qui ont de bonnes dents reçoivent une carte de santé. Les détenteurs de cette carte jouissent de privilèges spéciaux. Ce sont les groupes de jeunes qui reçoivent la plus grande attention. Récemment, l'on adoptait un nouveau règlement en vertu duquel on ne peut considérer comme ayant une bonne denture un individu âgé de plus de 40 ans.

Financement

Tout le projet est financé par les cotisations payées par les membres aux Fonds de Maladie, qui reçoivent en plus de forts subsides du gouvernement. Les dentistes sont rémunérés par le Fonds de Maladie d'après des honoraires fixés par les représentants des Fonds et les représentants de la profession. Les représentants des Fonds ont une pauvre idée de la valeur des traitements dentaires: de là, l'échelle pitoyable des honoraires. Ces honoraires sont tellement minimes que les dentistes sont forcés de consacrer de longues heures à leur travail, en comptant sur la quantité plutôt que sur la qualité pour gagner leur vie. Les dentistes gagnent en moyenne 40,000 à 50,000 florins* par année et l'impôt leur en retient une bonne partie.

* Un florin valait 26 centins en 1957.

Depuis 1946, l'Association dentaire des Pays-Bas a négocié presque sans interruption avec les organismes du Fonds de Maladie. Les résultats de ces négociations ont été presque nuls. L'Association s'est servie d'économistes experts afin de déterminer un revenu net raisonnable pour un nombre normal d'heures de travail. L'arbitrage a été refusé par le Fonds de Maladie.

Nombre de dentistes

La proportion des dentistes en rapport avec la population s'établit à un dentiste par 4800 personnes: c'est une proportion assez faible. Il y a en Hollande quelque 2,500 dentistes. De ce nombre, 1,500 travaillent pour le Fonds; de 300 à 400 s'occupent des services scolaires et les autres sont en pratique privée.

Peu de gens se dirigent vers les études dentaires et l'Association des dentistes se préoccupe de trouver des candidats plus nombreux. On prétend que la principale raison de cette lacune dans le recrutement doit se trouver dans la modicité des revenus.

Personnel auxiliaire

Il n'y a pas de cours d'assistantes dentaires, ni pour des hygiénistes dentaires. Les techniciens suivent un cours d'apprentissage et doivent passer des examens pour se qualifier. Afin de devenir propriétaire d'un laboratoire, un technicien doit répondre à des exigences assez sévères.

Traitements d'orthodontie

Comme dans la plupart des pays d'Europe, les traitements d'orthodontie sont prodigués en groupe. Il nous fut donné de passer une journée complète dans une clinique où sont traités les cas d'orthodontie. Cette clinique faisait partie d'un cabinet particulier, car le Fonds de Maladie ne couvre pas ces traitements. La clinique est ouverte de 11 heures A.M. à 2.30 P.M. et 4 orthodontistes y travaillent. Chaque orthodontiste voit de 15 à 20 patients par heure et, au cours de ma visite, il y avait 4,500 enfants sous traitement dans cette clinique. Tous les appareils employés sont détachables. Les frais sont minimes: au maximum 200 florins (\$52.00). Tout cas non terminé après une période de deux ans et demi est complété gratuitement. On put examiner des patients dont le traitement était terminé avec d'excellents résultats. Pour organiser ces services, on se base sur l'idée qu'il vaut mieux traiter un plus grand nombre d'enfants en améliorant leur état de 85 à 90% plutôt que d'en traiter à fond un nombre plus restreint.

Enseignement dentaire

La Hollande possède deux écoles dentaires, l'Institut dentaire d'Utrecht et l'Ecole den-

taire de l'Université de Groningen. Ces deux écoles sont des sections des facultés de médecine. L'Ecole d'Utrecht existe depuis plusieurs années (1887), mais l'Ecole de Groningen ne date que de 1947. Jusqu'en 1947, l'Ecole d'Utrecht était une école d'Etat et le gouvernement décernait le diplôme: les dentistes hollandais plus âgés ont donc un diplôme d'Etat. Ceux qui ont terminé leurs études depuis 1952 (première promotion depuis le changement) reçoivent un diplôme universitaire (Tandarts). Les Ecoles dentaires transigent directement avec les autorités universitaires, par l'intermédiaire de la faculté de médecine, sans ingérence gouvernementale. Le Conseil des Gouverneurs de l'Université vote leur budget et, à cause de la pénurie de dentistes, accueille favorablement toutes les demandes raisonnables qui lui sont faites. Cependant, le gouvernement paie les salaires du corps professoral et ceux-ci, en retour, ont le statut d'employés civils. Comme l'Ecole d'Utrecht est petite et désuète, on songe à construire un nouvel édifice.

Les normes académiques requises pour l'admission sont les mêmes pour tous les cours universitaires. Le cours dentaire dure six ans. Les deux premières années sont des années de sélection. A la fin de la première année, tout étudiant peut changer de cours sans affecter son classement. L'Ecole d'Utrecht peut accepter 100 étudiants en première année (Groningen 45) mais la clinique ne peut en contenir que 60 (Groningen 30). A la fin de la deuxième année, on fait un choix d'élèves en se basant sur les résultats des examens.

L'année scolaire s'étend du début de septembre à la fin de juin avec environ trois mois de vacances répartis sur toute l'année. La clinique fonctionne douze mois par année. Durant les périodes de vacances, les étudiants ont certains quotas à remplir et, à cet effet, il existe pour eux un système rotatif de présences; après avoir satisfait à cette obligation, l'étudiant est libre de demeurer à la clinique à plein temps.

Les cours d'études de Groningen et d'Utrecht sont les mêmes, pour les deux dernières années. Mais, à Groningen, contrairement à ce qui existe à Utrecht, les deux premières années d'études se confondent avec celles de la médecine.

Au point de vue hospitalier, les étudiants font un stage de 6 semaines dans un hôpital, où ils assistent à tour de rôle un chirurgien pour les cas de chirurgie buccale majeure. Toute la chirurgie mineure se fait dans les cliniques universitaires.

Le curriculum des études pour les six années est le suivant:

TANDHEELKUNDIG INSTITUUT DER RIJKS—UNIVERSITEIT TE UTRECHT**Curriculum pour 1957-1958**

(Les cours théoriques en caractères gras)

	1 ^{ère} année	2 ^{ème} année
lundi	9.00-12.00 Technique dentaire 13.30-14.15 Zoologie 14.15-17.00 Laboratoire de zoologie 17.15-18.00 Biochimie (terme d'automne)	14.00-17.00 Laboratoire de pathologie
mardi	9.15-10.00 Biochimie (terme du printemps) 10.15-11.00 Anatomie 11.15-12.00 Chimie 14.00-17.00 Laboratoire de technologie (terme d'automne) 14.00-17.00 Laboratoire de technologie (terme du printemps)	8.15- 9.00 Histologie spéciale 9.15-10.00 Orthodontie 10.15-11.00 Biochimie (printemps) 11.30-12.15 Anatomie 13.30-14.15 Physiologie 14.30-17.30 Laboratoire de matériaux dentaires
mercredi	9.15-10.00 Anatomie dentaire 10.15-11.00 Biochimie 11.30-12.15 Matières diverses (non dentaires) 14.00-17.00 Laboratoire d'histologie (terme du printemps) 14.00-17.00 Laboratoire de technologie (terme d'automne)	8.15- 9.00 Dentisterie opératoire 9.15-11.15 Laboratoire de dentisterie opératoire 11.30-13.15 Matières diverses 14.00-17.00 Histologie spéciale, laboratoire (terme d'automne)
jeudi	9.00-12.00 Laboratoire d'anatomie dentaire 14.00-17.00 Laboratoire de physique	9.00-12.00 Laboratoire de physiologie (terme du printemps) 13.30-15.30 Laboratoire d'anatomie 15.45-16.30 Matériaux dentaires 16.45-17.30 Orthodontie
vendredi	8.15- 9.00 Génétique 9.15-10.00 Zoologie 10.15-11.00 Anatomie 11.15-12.00 Histologie 12.15-13.00 Physiologie 14.30-16.30 Laboratoire d'anatomie 16.45-17.30 Matières diverses	9.15-10.00 Pathologie 10.15-11.00 Pathologie 11.15-12.00 Anatomie 13.30-15.30 Laboratoire de dentisterie opératoire 15.45-16.30 Dentisterie opératoire 16.45-17.30 Matières diverses
samedi	9.15-10.00 Physique	8.15- 9.00 Dentisterie opératoire 9.15-12.00 Laboratoire de dentisterie opératoire
	Après 1957, il y aura du laboratoire de chimie	Le laboratoire de biochimie commencera en mars

	3e année	4e année
lundi	8.30-11.15 Laboratoire de prothèse 11.30-12.15 Médecine Interne 14.00-17.30 Bactériologie (printemps) 14.30-15.15 Prothèse (automne) 15.30-16.15 Orthodontie (jusqu'en mars) 16.15-16.45 Discussion de cas d'orthodontie	8.30-11.15 Clinique de dentisterie opératoire 14.00-17.00 Clinique de prothèse 17.15-18.00 Psychiatrie
mardi	8.30-11.30 Laboratoire de prothèse 11.45-12.30 Pharmacologie 13.30-17.00 Laboratoire de prothèse (jusqu'en mars) 14.00-17.30 Bactériologie (printemps)	9.00-11.30 Orthodontie: examen de patients (jusqu'en mars) 11.45-12.30 Pharmacologie 14.00-17.00 Laboratoire de pharmacologie (automne) 14.00-17.00 Laboratoire de pathologie spéciale (1er janv.-1er mars)
mercredi	8.30-11.15 Laboratoire de dent. opér. 11.30-12.15 Matières diverses 13.30-17.15 Laboratoires de prothèse (jusqu'en mars) 14.00-17.30 Bactériologie (printemps)	8.00- 8.45 Médecine Interne 9.00-11.15 Clinique de prothèse 11.30-12.15 Matières diverses 13.30-16.30 Clinique d'orthodontie (printemps) 16.45-17.30 Prothèse
jeudi	8.00- 8.45 Médecine Interne 9.00- 9.45 Pathologie spéciale 10.00-10.45 Matériaux dentaires 11.00-11.45 Pharmacologie 13.30-17.30 Laboratoire d'orthodontie pratique	9.00- 9.45 Pathologie spéciale 10.00-10.45 Matériaux Dentaires 11.00-11.45 Pharmacologie 13.30-14.15 Dentisterie opératoire 14.30-17.30 Clinique de dentisterie opératoire
vendredi	8.15- 9.00 Chirurgie générale 9.15-10.00 Prothèse 10.15-12.15 Laboratoire de prothèse 13.30-16.30 Labor. de dentisterie opératoire 16.45-17.30 Matières diverses	8.15- 9.00 Chirurgie générale 9.15-11.15 Clinique de dentisterie opératoire 12.15-13.00 Chirurgie buccale 14.00-16.30 Clinique de prothèse 16.45-17.30 Matières diverses
samedi	9.00-12.00 Laboratoire de dentisterie opératoire	8.00- 8.45 Médecine interne 9.00- 9.45 Bactériologie 10.00-10.45 Discussion de cas d'orthodontie 11.00-11.45 Orthodontie

	5e année	6e année
lundi	8.30-11.15 Clinique de dent. opératoire 11.30-12.15 Médecine buccale 13.30-14.15 Orthodontie 14.30-17.00 Clinique de prothèse 17.15-18.00 Psychiatrie	8.30-11.15 Clinique de dent. opératoire 11.30-12.15 Médecine buccale 13.30-14.15 Orthodontie 14.30-17.00 Clinique de prothèse 17.15-18.00 Dentisterie sociale
mardi	9.00-10.15 Bactériologie (Groupes A & B) 10.30-11.15 Pédiatrie 11.30-12.15 Prothèse 13.30-14.15 Dentisterie opératoire (printemps) 13.30-17.30 Clinique de dentisterie opér. (automne) 14.30-17.30 Clinique de dentisterie opér. (printemps)	8.15- 9.00 Dermatologie et Syphillogie 9.15-10.00 Oto-Rhino-Laryngologie 10.15-11.00 Prothèse 13.30-14.15 Dentisterie opératoire (printemps) 13.30-17.30 Clinique de dentisterie opér. (automne) 14.30-17.30 Clinique de dentisterie opér. (printemps)
mercredi	8.30-11.15 Clinique de prothèse 11.30-12.15 Matières diverses 14.00-17.00 Clinique d'orthodontie	8.30-11.15 Clinique de prothèse 11.30-12.15 Matières diverses 14.00-17.00 Clinique d'orthodontie
jeudi	8.30-11.15 Clinique de prothèse 11.30-12.15 Médecine buccale 13.30-17.30 Clinique de dent. opératoire	8.15-11.15 Clinique de prothèse 11.30-12.15 Médecine buccale 13.30-17.30 Clinique de dentisterie opérat.
vendredi	8.30-11.15 Clinique de dent. opératoire 11.30-12.15 Dermatologie et Syphillogie 13.30-14.15 Prothèse 14.30-16.30 Clinique de prothèse 16.45-17.30 Matières diverses	8.30-11.00 Clinique de dentisterie opératoire 11.15-12.00 Dentisterie opératoire 13.30-16.30 Clinique de prothèse 16.45-17.30 Matières diverses
samedi	9.00- 9.45 Bactériologie 10.00-10.45 Prothèse 11.00-12.00 Laboratoire	9.00-12.00 Laboratoire

Les frais de scolarité se chiffrent à 200 florins par année. Ce montant a tendance à diminuer. Les étudiants achètent leurs instruments (coût total, environ 6,000 florins). On prévoit que le gouvernement accordera une remise de 3,000 florins. Vu le besoin pressant de dentistes, le gouvernement est porté à se montrer généreux envers l'enseignement dentaire.

Le personnel de l'Institut dentaire d'Utrecht comprend 10 professeurs à plein temps (4 professeurs, 4 auxiliaires en science et 2 chargés de cours) ainsi que 47 cliniciens à temps partiel. Après avoir appris à fond la technique, les étudiants peuvent confier leurs travaux aux techniciens employés par l'Ecole. Ces techniciens sont au nombre de 11 sous la direction d'un chef technicien dentaire.

A la fin de ses études, l'étudiant reçoit le diplôme de "tandarts" qui lui permet, d'après la loi, d'exercer son art. En préparant une thèse, l'étudiant peut décrocher un titre supérieur, celui de "Doctor Medecinae Dentaire".

Observations

1. Malgré les efforts énergiques de l'Association dentaire des Pays-Bas, les honoraires accordés aux dentistes sont si bas que ces derniers doivent travailler de longues heures, en se préoccupant surtout de la quantité.

2. Cette situation économique a créé une sérieuse pénurie de dentistes.

3. D'un autre côté, le gouvernement se montre généreux envers l'enseignement dentaire et est disposé à augmenter cette assistance.

4. En autant qu'on le sache, la Hollande est le seul pays qui favorise ceux qui maintiennent leur denture en bon état. Au point de vue prévention, cette méthode est idéale. Toutefois, lors de ma visite, cette question faisait l'objet de chaudes discussions. Pour continuer à être classé dans la catégorie de ceux qui prennent soin de leurs dents, un citoyen doit visiter le dentiste régulièrement. Le dentiste n'est payé que lorsqu'il donne des traitements; alors si le patient ne requiert aucun soin, le dentiste consacre gratuitement une grande partie de son temps à l'examen des patients.

5. En général, les soins dentaires se donnent en cabinet privé. Dans quelques grandes villes, les traitements peuvent se donner dans des polycliniques.

Fluoruration aux Etats-Unis

Selon des chiffres cités par le Service d'Hygiène publique des Etats-Unis, il y avait dans ce pays, au 1er mai 1958, 1,644 villes qui mettaient en pratique la fluoruration et ainsi 33,418,719 personnes bénéficiaient de cette mesure.

Deux projets de loi au sujet de dentistes sont défaits en comité, au Nouveau-Brunswick

Deux bills en rapport avec la profession dentaire étaient inscrits au programme de 1958, à la Législature du Nouveau-Brunswick. Ces projets de loi, par lesquels deux individus qui n'avaient les qualifications voulues désiraient exercer la dentisterie, ont été défaits en comité.

Le bill no 75 portait comme titre: "Loi pour permettre à G. Hartley Kindred et Ralph Leo Landers de réparer et de confectionner des dentiers et pour les exempter de la clause d'injonction de la loi dentaire du Nouveau-Brunswick de 1958".

Le bill no 119 était intitulé: "Loi pour permettre à Joseph Luc Alfred Savoie d'exercer la dentisterie".

Par le bill no 75, ces deux techniciens tentaient une quatrième fois, toujours avec des formules différentes, d'obtenir la permission d'exercer la prothèse sous une forme ou sous une autre. Ces deux individus sont l'objet d'injonctions contre eux pour avoir pratiqué illégalement.

M. Savoie est un diplômé en chirurgie dentaire de l'Université de Genève, Suisse. Le Collège du Nouveau-Brunswick lui avait refusé une licence parce qu'il n'avait pas les qualifications nécessaires, à savoir être diplômé d'une faculté dentaire reconnue. Il cherchait à obtenir sa licence par un bill.

Le Comité des Corporations a étudié ces deux bills le 24 avril dernier. Toutes les parties étaient représentées par des avocats. Les bills n'ont pas franchi le stage du comité.

"La carrière de dentiste"

Pour répondre à une forte demande, le Conseil d'Enseignement dentaire de l'Association dentaire canadienne vient de publier un nouveau fascicule intitulé "La carrière de dentiste".

Cette publication est destinée aux élèves finissants des cours secondaires, qui sont intéressés à embrasser la carrière de dentiste.

Les frais d'impression n'ont pas été élevés grâce à l'installation dont dispose le Secrétariat de l'A.D.C. On peut s'en procurer des copies à raison de .10 la pièce parce que l'Association a adopté la politique de distribuer ce genre d'imprimés aux prix coûtant.

Un ancien président de l'A.D.C. meurt en Floride

Le docteur Georges L. Cameron, président de l'Association dentaire canadienne de 1934-1936, est mort subitement en Floride, le 29 avril dernier. Les obsèques ont eu lieu le 5 mai à Ottawa, où il demeurait.

Elu à la réunion de 1934, tenue à Toronto, le docteur Cameron fut le 19e président de l'Association. Il aurait eu 74 ans le 8 mai.

Congrès de l'Association Dentaire Canadienne

à l'Hotel Reine Elizabeth à Montréal — les 26, 27, 28, 29 octobre 1958

PROGRAMME SCIENTIFIQUE

Séances plénières

1) Le docteur Wilton M. Krogman, Ph.B., A.M., Ph.D., L.L.D., de Philadelphie, Pennsylvanie.

- Professeur d'anthropologie physique et directeur de l'Ecole des Diplômés en médecine et de l'Institut dentaire Evans de l'Université de Pennsylvanie.
- Directeur du Centre des Recherches sur la Croissance Infantile de Philadelphie (maintenant l'Institut d'études infantiles de Philadelphie).
- Auteur des volumes "Growth of Man" et "Roentgenographic Cephalometry".
- Membre honoraire de la Northeastern Society of Orthodontists, Great Lakes Orthodontic Society et Edward H. Angle Society of Orthodontists.

Conférence: "La croissance—facteur fondamental de l'occlusion"
(sous les auspices de la Section d'Orthodontie de l'A.D.C.)

2) Le docteur Wilfred Feasby, D.D.S., Hamilton, Ontario

- Diplômé en Pédiodontie, Toronto
- Ancien président de l'Association dentaire de Hamilton
- Spécialiste en Pédiodontie
- Ancien président de l'Association dentaire de Hamilton
- Ancien président de la Société canadienne de Dentisterie pour Enfants
- Membre de l'American Academy of Pedodontics

Conférence: "Pédiodontie"
(sous les auspices de la Section de Dentisterie pour Enfants de l'A.D.C.)

3) Le docteur W. Harry Archer, B.S., M.A., D.D.S., Pittsburg, Pennsylvanie

- Professeur de chirurgie et d'anesthésie buccale à la faculté dentaire de l'Université de Pittsburg
- Chef du service de chirurgie buccale, Faculté dentaire.
- Chirurgien buccal—chef des hôpitaux South Side et Ste-Claire.
- Chef du service dentaire du Magee Hospital
- Membre d'honneur de l'Association des Licenciés et Dentistes universitaires de Belgique.
- Auteur des volumes "Oral Surgery" et "A Manual of Dental Anesthesia".

Conférence: "Chirurgie buccale d'intérêt particulier pour l'omnipraticien"
(sous les auspices de la Section de Chirurgie buccale de l'A.D.C.)

4) Le docteur Pierre Cernéa, Paris, France.

- Professeur agrégé à la Faculté de Médecine de Paris
- Chargé des cours de Stomatologie à la Faculté de Médecine de Paris
- Co-directeur de l'Encyclopédie médico-chirurgicale (vol. Stomatologie)
- Directeur des Actualités Odonto-Stomatologiques
- Stomatologiste des Hôpitaux (Paris)
- Membre des Jurys des examens pour l'obtention du diplôme de Chirurgien-Dentiste

Conférence: "Epithéliomas du plancher de la bouche et du maxillaire inférieur—diagnostic et traitement".

5) Les docteurs: L. Laszlo Schwartz, D.D.S., New York, N.Y.

Albert W. Grokoeest, New York, N.Y.

Melvin Moss, D.D.S., A.B., Ph.D., New York, N.Y.

(docteur Melvin Moss)

- Directeur des recherches dans le service de chirurgie plastique, College of Physicians and Surgeons, Université Columbia.
- Membre de l'American Association of Anatomists, de l'American Association Phys. Anthropologists, de l'International Association Dental Research, de l'American Association Cleft Palate Rehabilitation.
- Assistant-rédacteur du Cleft Palate Bulletin
- Professeur d'anatomie, College of Physicians and Surgeons, Université Columbia.

"Panel sur l'articulation temporo-maxillaire"

Pour renseignements, inscriptions et réservations de chambres, s'adresser au:

Congrès de l'Association dentaire canadienne, 758 ouest, Sherbrooke, Montreal 2.

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F THE CANADIAN DENTAL ASSOCIATION

An Evaluation of Proper Procedures in Oral Diagnosis and Their Bearing on Subsequent Treatment Planning

JACK G. DALE, B.A., D.D.S., Toronto, Ontario

First Prize Essay—War Memorial Award Competition

INTRODUCTION

During the first half of the century we have been made to realize that the teeth are part of the total person⁷⁷ and that no other area in the human body presents more difficulties in diagnosis than the oral cavity⁵⁴.

In spite of this, many dentists neglect to give the patient the one thing that he has the right to expect: an honest diagnosis.⁸⁰ The mouth is seldom given more

than a superficial inspection, and as a result the practitioner is unable to carry out dependable dental therapy.²⁸

The time is not too far distant when the medical profession and the public alike will expect the dentist to be the mouth physician. It will be his obligation to recognize, identify and differentiate abnormal pathological conditions of the oral tissues.³³ If we are to meet these stand-

ards, we must carry out the proper procedures of oral diagnosis.

In the limited space that follows, I will attempt to enumerate and discuss such procedures with respect to importance, both to diagnosis and treatment planning. It must be remembered that it will not be possible to treat every aspect of this broad subject in detail. Thus, special consideration will be given to the more important methods.

FIRST APPOINTMENT

(a) *General Information*

Why do we record the patient's "vital statistics"? (Fig. 4, Appendix A) What value does it possess, and how can it have any bearing on the subsequent treatment planning?

First, it serves as a means of identification. Grant and others⁴² report that 50% of the mutilated victims of the Noronic disaster* were identified by the assistance of the dental profession. Johnson relates the predicament of one practitioner who was left with an unidentified corpse in his chair simply because he did not take the patient's name.⁵⁴ The legal repercussions here are evident.

The law states that the husband is responsible for the actions of his wife, and the parents for their children.⁴⁴ Since it is unlawful to enter into a contract without permission of the patient, or those responsible,⁴⁴ it is wise to enquire about marital status and to obtain patient, or guardian particulars.

Telephone numbers and addresses are absolutely essential for future contact. However, any information in connection with the medical doctor should be received before the dental-medical history, otherwise the patient will worry needlessly.¹⁰

Thoma and Robinson⁸¹ relate age, sex, race, birthplace and occupation to specific diseases, or conditions. Burket¹⁰ lists an impressive collection of oral manifestations of occupational diseases, all of

which may have an important bearing on the treatment prescribed.

The diagnostician should be acquainted with the economic, social, religious and personal needs of the patient.¹² Such data is invaluable in determining the type of treatment and the expense involved.

Finally, the "reason for presentation" is important. It tells the assistant what type of patient she is dealing with; what his requirements are; whether he is strictly interested in the relief of pain, cosmetics, or function; or whether he is keenly dental conscious.³²

Unless told by the patient that he wishes particular care, the assistant should begin the process of a thorough diagnosis and treatment¹² by having him complete a medical-dental history questionnaire.

(b) *Dental-Medical Questionnaire*

A questionnaire is a self-explanatory, dental-medical history form where "No" and "Yes" answers are circled in response to the questions regarding family history, personal history, and a review of the systems:^{60, 63, 16, 81}

1. Family History
2. Personal History
 - i medical, past and present
 - ii dental, past and present
3. Review of the Systems
 - i ear, eye, nose and throat
 - ii cardio-vascular
 - iii respiratory
 - iv gastro-intestinal
 - v genito-urinary
 - vi gynecologic
 - vii neurologic
 - viii joint, bones and muscle
 - ix skin
 - x endocrine
 - xi neoplasm
 - xii psychologic

It is important that the patient be allowed to complete the form, alone, in a private room.

New York University has developed such a questionnaire with 219 questions for males and 233 for females (Fig. 7, Appendix B). Miller in a small study compares it to taking the history orally

* The S.S. Noronic, flagship of the Canada Steamship Lines, burned while anchored in Toronto harbour on Sept. 17, 1949, killing 118 of the 700 passengers.

(Table 1, Appendix B).⁶⁰ Other universities,^{83,16,81} and practitioners have employed a comparative procedure with equally satisfying results.¹⁶

Burket¹⁸ emphasizes the value of taking a comprehensive history even though it may not contribute to the actual diagnosis. He believes that it furnishes the clinician with information concerning physical make-up, susceptibility and reaction to infection, and emotional reaction to disease, all of which influence subsequent treatment and prognosis. He stresses the need for printed tabulation to prevent omission of any data.

Cheraskin,³⁹ on the other hand, lists the diseases and conditions that may be exposed with an extensive history and which have direct bearing on diagnosis (Tables 2 and 3, Appendix C).

The underlying purpose of the questionnaire is to acquire a preliminary history without relinquishing the valuable time of the dentist. It is not intended to replace completely the verbal history,⁸ but to prepare the patient for a short preliminary consultation with the practitioner which follows immediately.

(c) Preliminary Consultation

Consultation in the sanctuary of the dentist's private office, at this particular time, has many attributes:

1. It provides opportunity for the busy operator to sit down and to relax for ten minutes, away from the atmosphere of his surgery.

2. A friendly and reassuring attitude on the part of the dentist instills confidence in the patient and ensures future co-operation.

Blass¹² cautions that we must not be indifferent to the patient's needs.

3. By careful observation of the person's general appearance, behaviour, personality and mentality, the alert practitioner is able to plan more efficiently the subsequent diagnostic procedures and ultimate therapy.

Sound clinical impressions come, in large part, from observation, one of the

principal sources of knowledge.²⁷

The highest level of diagnosis is reached when consideration is given to the patient as a person, as an individual with hopes and fears, with an outlook on life, and an opinion of his own.⁶⁶

Elfenbaum^{33,34} declares that the world admires the dentist for his skill, respects him for his knowledge of the oral tissues, and appreciates him for his understanding of the person of whom the tissues are a part.

Paracelsus¹³ remarked in the 16th Century that he who wants to know man must look upon him as a whole.

Plato¹³ tells us of the great error in treatment of the individual: the separation of the soul from the body.

Man is made of mind and matter, of body and soul. The health profession in serving the patient must remain ever cognizant of the fact.²³

4. During consultation the prepared history is checked and supplemented with a verbal history (Fig. 4, Appendix A) which includes the chief complaint.

Burket¹⁸ urges that the patient be allowed to express in his own words, step by step, the history and symptoms of his present dental problem. He should be interrupted as little as possible, and all leading questions should be avoided.

Careful prompting may be necessary if the patient wanders, forgets, stresses unimportant factors, or withholds vital information because of embarrassment.

5. Preliminary consultation provides an opportune moment for the dentist to explain to the patient that there is a fee for diagnosis.

In spite of the usually conceded fact among professional men that a diagnosis is of the highest value to the patient, dentists as a rule do not offer this service for a fee.⁶⁴

6. Finally, further diagnostic procedures will be more easily accepted if fully explained. The patient, then, should be given the privilege to accept, or reject.¹³

(d) Preliminary Procedures

With the patient sitting in the operating chair, the mouth is given a superficial inspection with two small tongue depressors.¹⁸ On the basis of this procedure, and on previous information derived from the history and consultation, the dentist prepares for the second appointment.

The roentgenograms are taken. Impressions for study models are secured, if feasible. Tissue for biopsy, samples for laboratory tests and photographs are procured only when obviously indicated. The dentist may give the patient a daily diet sheet to have prepared, and finally, he may carry out any emergency treatment that is necessary.

The results of such procedures will give valuable assistance to the dentist on the second appointment when he is confronted with the problem of making a diagnosis and treatment plan. Moreover, having such information available between appointments will make it possible for him to reach a tentative decision.

SECOND APPOINTMENT

(a) Examination

The patient has made his contribution to the diagnosis. It is now the responsibility of the dentist, through examination, to make his. It is not enough, however, just to make a cursory inspection. If this procedure is to be of any value, the examiner must keep the following in mind:

1. It must be accurate and complete.

A painstaking and thorough examination will never go unnoticed, and if offered in the spirit of service it will contribute immeasurably to the successful treatment of the patient.²⁰

Eaton urges that we conscientiously endeavour to render an examination and diagnosis which will be a credit to our chosen profession.²⁰

2. It should be carried out in a routine manner.

Cheraskin,^{20,21,22} Burket,¹⁹ Bradlaw,¹⁴

Thoma and Robinson,²¹ to mention only a few distinguished in the field of oral diagnosis, stress the significance of establishing a routine such as the one outlined in Fig. 1. It reduces the time involved, and minimizes the possibility of overlooking conditions that may completely alter the treatment plan. There are as many different procedures as there are practitioners, and the example given in Fig. 1 is an accumulation of ideas from many texts and articles. It is meant to serve only as a guide.

3. The examination should not be restricted to the oral cavity.

The dental practitioner who begins examination with a mirror and probe is like the medical doctor who puts a stethoscope in his ears as he approaches the bed of a sick patient.²⁰

Practically all authorities consulted agree that the examination should begin with the distant, over-all, or gross appearance. After this has been made the dentist may move closer so as to bring the head and neck, and finally the oral cavity into more detailed focus. Within the mouth utmost efficiency is achieved by a series of circuits beginning at a specified location (Fig. 1).

4. Lastly, the dentist should use every available diagnostic aid, or procedure, which will contribute to the ultimate welfare of the patient.

(b) Diagnosis and Treatment Plan

The dentist, now having used the five special senses²¹ to obtain a history, to carry out an examination, and to employ certain tests for obscure and indeterminate conditions, must develop a sixth: the ability to interpret, evaluate and make a comprehensive, correlated study of the findings.

This particular procedure is without question the most important; here is where the practitioner, in the light of knowledge and experience, must produce a sound diagnosis, and organize a treatment plan with notation of possible contingencies.

A. GENERAL

1. physical appearance
2. stature
3. gait
4. speech
5. hands
6. habits
7. mentality

B. HEAD AND NECK

1. head, size and shape
2. skin, colour and character
3. hair, colour and character
4. face: symmetry, asymmetry, swellings, expression
5. ears, eyes, nose
6. sinuses
7. neck, swellings and lesion

C. ORAL

1. Breath
2. Saliva
3. Soft tissues:
 - i lips, outside and inside
 - ii buccal mucosa and muco-buccal fold
 - iii sublingual space and lingual mucosa
 - iv tongue, all surfaces
 - v palate, hard and soft
 - vi tonsils and pharynx
4. Gingiva: contour, colour, consistency, recessions, discharge
5. Periodontal pockets: depth, trifurcation, bifurcation, bone-loss, discharge
6. Calculus: supra gingival, sub. gingival, amount
7. Mouth hygiene, pigment formation, deposits
8. Mobility, static and functional
9. Eruption: over eruption, under eruption, non eruption
10. Missing and malposed teeth: tipped, drifted, rotated, general arrangement.
11. Contact areas
12. Tooth morphology: size, shape, variations, anomalies
13. Restorations and appliances: hygiene, function, appearance
14. Caries: specific, susceptible, immune
15. Occlusion: classification, overbite, overjet
16. Temporo-mandibular joint
17. Chief complaint:
 - i pain
 - ii location, shape, size, colour, contour, consistency, discharge
 - iii inflammation, degeneration, neoplasm, or anomaly
 - iv infection, traumatic, congenital, nutritional, metabolic, or blood
 - v temperature
18. Lymphatic glands.

FIG. 1. Examination procedure guide. 39, 21, 20, 16, 81, 54, 50, 69, 49, 63, 42, 29, 5, 12, 84, 66, 65, 38.

(c) *Final Consultation*

The second and final consultation with the patient is of paramount importance:

1. It is necessary for the purpose of explanation. The dentist, having reached his objective, is now, and only now, in a position to formulate answers to questions that he anticipates from the patient, such as:³⁵

- (a) What is the condition of my mouth?
- (b) What treatment do you advise?
- (c) How successful will treatment be?
- (d) How much will the treatment cost?

2. It provides an excellent opportunity to educate with respect to prevention and dental health, for such an opportunity as this will never recur, when the patient has his own dental problem before him with all its ramifications.⁶

3. It is advisable for the dentist or assistant, with the co-operation of the patient, to establish a well organized schedule of appointments for the execution of the accepted treatment plan.¹²

DIAGNOSTIC AIDS

(a) *Roentgenograms*

Ignored by many some 35 years ago as "a passing fad and a very mischievous one,"⁷¹ roentgenograms are now firmly established as an indispensable adjunct to modern day diagnosis.

Barr and Gresham⁶² made clinical and roentgenographic examination of 416 patients. They concluded that neither technique by itself proved adequate in any circumstances studied, and should therefore be regarded as mutually complementary.

In a study made of 100 vocational school students, Watsky⁹⁷ revealed that without roentgenographic examination to supplement the clinical, 21% of decayed teeth would have remained undiscovered, and 29 miscellaneous pathological conditions, some extremely serious, would have been missed.

The Pierre Fauchard Academy Poll^{11, 2, 98} in 1950 disclosed that 95.5% of the dentists in the United States considered the

X-ray machine as an essential part of their equipment. 86-89% included bite wing films in examination, and almost 60% resorted to full mouth surveys of new patients.

It is generally conceded that roentgenograms have inestimable value as a diagnostic procedure. However, Eselman,³⁸ Sweet,⁸⁰ von Recknow,⁸⁵ and Butler¹⁷ list an impressive collection (too extensive to include here) of limitations, misconceptions and errors. Hielscher⁴⁶ goes as far as saying 50% of present day (1957) roentgenograms are useless. Worth⁹¹ and others,^{38, 53, 90} stress the meticulous care that is required in producing and interpreting roentgenograms.

The present concern with regard to excess radiation triggered by nuclear tests and the National Academy of Sciences' Report in 1956³⁸ has prompted many articles to appear in the literature^{68, 97, 19} The Canadian Dental Association, Research Committee¹⁹ has concluded that the dangers of radiation resulting from the use of dental X-ray units appear to be low. However, they recommend that every precaution be exercised.

The developments of modern research^{85, 46, 53, 68, 59, 76, 48} are rapidly increasing the value of roentgenograms, and as a result the health standards of the patient will be commensurately enhanced.

(b) *Study Models*

Any procedure which will shed light on the dental condition of the patient deserves our careful consideration.

Schoenfeld⁷³ and Bartels⁵ promote the routine use of study casts, revealing that they have proved their worth in diagnosis of the patient from the normal child and adult, through the many stages of dental deterioration to those requiring full dentures.

Bernier,⁷ Thoma and Robinson⁹¹ feel that many disharmonies become more apparent when the teeth are seen in plaster outside the mouth, and recommend their use when indicated.

The utilization of study casts will contribute immeasurably to the examination and ultimate treatment of the patient.

(c) Laboratory Tests

While there is no doubt that the basis of all diagnostic practice is clinical examination and proper interrogation of the patient, the results of these procedures alone are often inconclusive.

Countless case histories^{72,74,45} have appeared in the literature to substantiate the use of the laboratory in diagnosis of disease related to the oral structures. Laboratory tests may be the only means of diagnosis; they may disprove a diagnosis derived from history, clinical and roentgenographic examination,⁷⁴ or they may confirm a correct clinical interpretation.^{72,74}

Stark,⁷⁰ Burket,¹⁶ Cohn,²² Anderson⁴ and numerous other reputable dental authorities outline the laboratory tests which have value in the dental practice. The tests have been broken down into two sections: those performed by the dentist, and those sent to a laboratory (Fig. 2).

Final diagnosis without laboratory procedures has given rise to serious complications and at times fatality. Laboratory intervention in many instances completely reverses the treatment and prognosis with dramatic results.

Reich⁷² emphasizes, however, that these tests alone are not enough, and that the final diagnosis of the patient's condition depends upon the intelligent interpretation of all the findings.

(d) Biopsy

The removal of a small piece of tissue for microscopic examination is a simple, painless and inexpensive procedure which can be carried out in any dental practice.

30, 40, 50, 8

It is important, nevertheless, that careful consideration be given to the clinical indications,⁸⁰ and that the operation be carried out with meticulous care and thoroughness.⁹ The scalpel technique, it is

agreed, is the most practical in the oral cavity.

Bernier⁸ says:

'Biopsy is sometimes avoided because of fear that the procedure may disturb a quiescent tumor, or cause a spread of malignant lesions. This is of course a theoretical possibility. However, practical experience has shown that it seldom occurs.'

The complications are heavily counterbalanced by the importance of confirming a diagnosis with a good biopsy. Therefore, to point the way for rational therapy, it should be done by the first capable person who sees the lesion, at the time he first sees it.

(e) Diet Analysis

Diet is and perhaps always will be of such significance that it cannot be overlooked.⁵ This is especially true in dentistry where so much depends on the food intake of the patient.

(f) Photography

Journals and textbooks have produced, to date, little knowledge with regard to the value of photographs in oral diagnosis and treatment planning. However, Bradlaw,¹⁴ Miller,⁶⁰ Thoma and Robinson⁶¹ advocate their use, especially for recording purposes. Such records have proved invaluable in treatment, both in planning and progress.

(g) Transillumination

Professor P. E. Ireland, head of the department of Oto-Laryngology, Faculty of Medicine, University of Toronto, suggests that if dentists included transillumination in their routine diagnostic procedures, more antral disturbances would be attributed to "obscure" pain and as a result, fewer teeth would be extracted.⁶¹

Abdalla¹ and Fixott⁴⁰ advocate the use of this procedure for the recognition of calculus, cavities, overhanging margins, root canal fillings, fractures, impactions, unerupted teeth etc.

Thoma and Robinson,⁶¹ on the other hand, feel that transillumination, except

A. HEMATOLOGICAL PROCEDURES	PLACE
1. Sedimentation rate.....	Laboratory
2. Hemorrhagic tendencies.....	Office
(a) clotting time	
(b) bleeding time	
(c) tourniquet test	
3. Complete blood count.....	Office
(a) Leukocytes	
(b) Erythrocytes	
(c) Hb	
(d) Colour index	
(e) Differential blood smear	
4. Blood pressure.....	Office
5. Blood chemical.....	Laboratory
(a) glucose	
(b) cholesterol	
(c) phosphorus	
(d) calcium	
B. SEROLOGICAL	Laboratory
C. BACTERIOLOGICAL	Office
(a) stained smears	
(d) blood cultures	
D. URINALYSIS	Office
(a) S.G.	
(b) pH	
(c) volume	
(d) albumen, glucose, acetone, calcium	
(e) colour, odour	
(f) microscopic	
E. LACTOBACILLUS ACIDOPHILUS	Laboratory
F. SALIVA	Office
(a) resting	
(b) stimulated	
(c) pH	
G. PATCH TESTS	Office
H. TEMPERATURE, PULSE, RESPIRATION	Office

FIG. 2. A sample of the tests available to the dentist for diagnostic purposes. 79, 16, 22, 4.

for sinuses, has very little value in diagnosis since it has been overshadowed by the roentgenogram.

(h) *Vitalometer*

The electric pulp test is based on the fact that sensitivity to the current varies with the degree of vitality of the pulp. Responses above, or below the threshold established on a normal tooth, will begin to assume importance when correlated with other findings.⁶⁰ However, care must be exercised when carrying out this procedure.

(i) *Thermal Pulp Tests*

The application of heat or cold to the surfaces of the teeth help to locate those that are pathologically involved.

This procedure is reasonably quick and simple but is not quite as accurate as the electric current, because it cannot be controlled.^{40, 66}

(j) *Percussion*

Percussion is not often taught thoroughly, or learned adequately, and many practitioners never succeed in acquiring a capability in the use of it sufficiently to make them rely on the results.¹⁵

However, it is valuable in examination of the sinuses, fractures, teeth, enlargements and periodontal membrane. It has real merit in diagnosis if used purposefully and given proper interpretation.^{15, 61}

(k) *Palpation*

Through his fingers the dentist actually projects himself.⁶¹ Much can be felt that cannot be seen, nevertheless all too often the eyes see but the hands do not feel.²⁵

Palpation has untold value in the detection of lymph gland involvement, salivary gland abnormalities, cysts, neoplasms, fractures, pulp disease, periodontal disturbances and other conditions pertinent in the consideration of dental treatment.^{25, 61, 10}

(l) *Explorer*

The routine utilization of explorers is absolutely essential. It is the oldest method of examination of tooth surfaces

that we have, but it should not be used exclusively.⁶⁰

In far too many instances it constitutes the complete examination²⁵ and consequently recurrent, or interproximal decay may be left undetected.

(m) *Periodontal Probe*

The calibrated periodontal probe is necessary for the detection of subgingival calculus, and may be the only means by which pockets are discovered and measured.

(n) *Dental Floss*

It is a recognized fact that dental floss is useful as an adjunct in the examination of contact areas, interproximal caries and overhanging fillings, all of which may influence dental therapy.

(o) *Magnifying Glass*

In spite of the fact that the magnifying glass is used by many less exacting trades and professions, it is seldom seen in the dental office.⁶⁰

Dr. Worth,⁶¹ noted medical-dental radiologist, absolutely refuses to examine, or interpret any roentgenogram without the assistance of a good magnifying glass. The reason is that many conditions, some serious, may remain undetected.

(p) *Optical Loupes*

Kroll⁶⁸ states that the routine use of optical loupes even for those with visual acuity is strongly recommended. It is an aid in seeing better and therefore helps in reducing or eliminating error and inaccuracy in examination of the oral structures.

(q) *Anaesthetic*

Local anaesthetic may be of inestimable value in the location of obscure pain. If it is injected into a suspected area and the pain is relieved, you can be reasonably sure that the etiology lies in the anaesthetized tissue.⁶¹

Siegel⁷⁵ cautions, however, that this technique should come last since further

diagnosis would be useless after the anaesthetic has taken effect.

(r) *Developments*

Diagnostic procedures like everything else do not remain static, and it is quite evident that our efficiency will be enhanced in the future by such developments as: the Chromometer,¹⁸ the Osmoscope,⁴⁷ the Scentometer,⁸⁸ the Somoscope,⁸² Fluorescence,⁴¹ Physiologic appliances,²⁴ New electron devices,⁷⁰ Radiopaque substances,⁶⁷ the Stereoröntgenogram,⁷⁸ the Panoramic X-ray machine,⁴⁸ to mention only a few.

(s) *Records*

Lacking, as we do, perfect memories, the fruits of investigations quickly spoil unless they are preserved.²⁷

The routine tabulation of pertinent facts, observations and impressions, is simply a matter of discipline. Its value is manifested when attempting to plan a treatment, or when confronted with legal complications.⁴⁴

The chart in Appendix A is only a sample, constructed with ideas extracted from many sources. The design is important, but the fact that data is charted is of greater consequence.

(t) *Professional Consultation*

It may be helpful and indeed necessary in special cases to refer the patient, or to seek advice from another general practitioner, dental specialist, or member of the medical profession.

The patient will respect and appreciate your interest in seeing that he receives the best possible treatment.

SUMMARY AND CONCLUSIONS

In all the fields of human endeavour, there are varying levels of objectives and varying levels of achievement.⁸⁹

The lowest level of oral diagnostic procedure is one that we can all easily achieve: the cursory inspection with nothing but mirror and explorer.

There is a higher level reached only with greater effort. This consists of a

comprehensive investigation employing the proper diagnostic procedures, such as:

1. History taking
2. Patient-dentist consultation
3. Extensive examination with its auxiliary aids
4. Correlation, interpretation and evaluation of the findings.
5. And finally, the establishing of a sound diagnosis and treatment plan which will restore the oral cavity to its normal anatomical and physiological condition.

There is the highest level which we can only hope to achieve in the future: diagnosis with improved and revolutionary procedures developed through research and education.

Throughout the body of the essay there has been an attempt to deal with the second level by listing the procedures, each in its chronological order, from the acquisition of the general information in the first appointment to the initial stages of treatment in the second.

REFERENCES

1. Abdalla, M. A. Transillumination as an aid in dental diagnosis. *D. Abs.* 1:424, July, 1956.
2. Access to X-ray equipment held essential to practice. *D. Survey*, 26:1392-93, Oct., 1950.
3. Agnew, R. G. Comments on the use of the N.Y.U. dental-medical questionnaire as an adjunct to dental diagnosis. (ed.) *J. Dent. Educ.* 16:199, Nov., 1952.
4. Anderson, J. C. Laboratory tests, electric vitality tests, transillumination. *Medentian* 2:39, 42-43, Jan., 1950.
5. Bartels, J. C. Diagnosis and case planning. *J. Calif. D. A. and Nev. D. Soc.* 31:79-81, Mar. Apr., 1955.
6. ———. Diagnosis and treatment planning. *J. Prosth. Dent.* 7:657-662, Sept., 1957.
7. Bernier, J. L. The management of oral diseases. *St. Louis, C. V. Mosby Co.* 1955.
8. Idem, p. 35.
9. ——— and Tiecke, R. W. Proper biopsy procedures. *Oral Health.* 41:24-27, Jan., 1951. Reprint.
10. Bernstein, L. Biopsy and the dentist. *Tufts D. Outlook.* 26: 9-10, Jan., 1954.
11. Bitewing films an important part of oral examination say dentists. *D. Survey.* 26:1707-1708, Dec., 1950.
12. Blass, J. L. How to examine the patient for ultimate achievement of maximum adequate dental services. *N.Y. Univ. J. Dent.* 13:100-109, Apr., 1955.
13. Boyd, W. Textbook of pathology, 6th ed., Phil., Lea and Febiger, 1953.
14. Bradlaw, R. V. Diagnosis of diseases of the gums. *Brit. D.J.* 75:147-148, Sept. 17, 1943.
15. Brayden, T. H. Percussion its use as a diagnostic aid in dentistry. *D. Stud. Mag.* 32:24, 28, 50, May, 1954.
16. Burket, L. W. Diagnosis and treatment, 2nd ed., Phil. London, Montreal, Lippincott. 1952.
17. Butler, A. L. Radiographs in diagnosis. *D. Survey.* 29:771-772, June, 1953.
18. Burwasser, P. and Hill, I. J. Chromometer for oral tissues. *J. Dent. Res.* 34:676, Oct., 1955, Abstract.
19. Canadian Dental Association, Research Committee Radiation hazards resulting from the dental X-ray units. *J. Can. Dent. Assoc.* 23:401, July, 1957.

(Concluded on page 527)

APPENDIX A

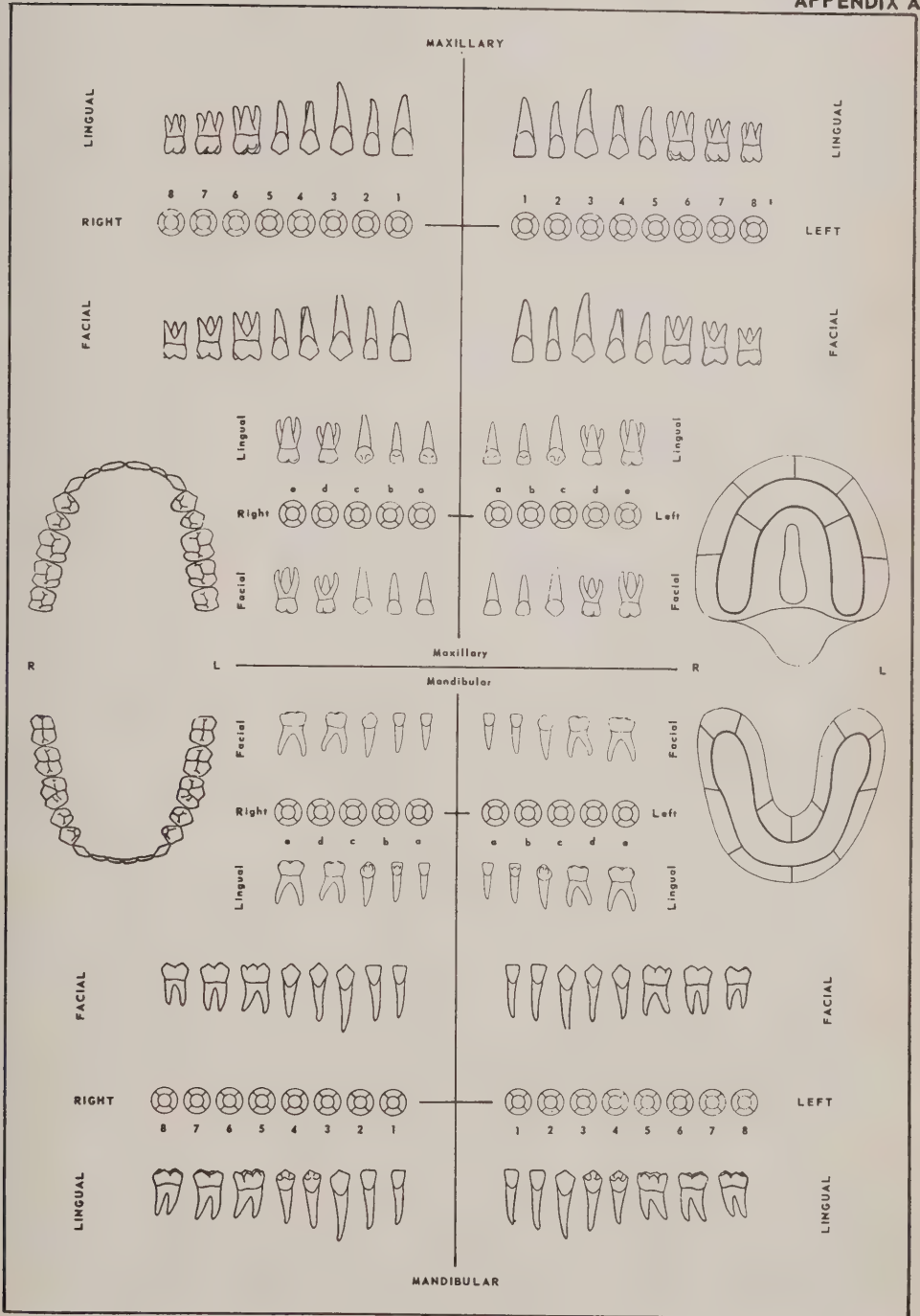


FIG. 3. Page 1 of diagnosis and treatment chart. 83,62,55,84,66

APPENDIX A

NAME	ADDRESS	TELEPHONE			
		RES.	BUS.		
Patient					
Physician					
Parent					
Referred by					
Birthplace	Date	Sex	Race		
Occupation	Religion	Marital status			
Reason for presentation					
Date					
HISTORY					
Are you in good general health?					
Last visit to physician - Date					
- Purpose					
Physician's report					
MEDICAL: Personal					
i illnesses and diseases					
ii operations					
iii accidents					
iv allergies					
v miscellaneous					
MEDICAL: Family					
DENTAL:					
CHIEF COMPLAINT:					
NUTRITION: (Canada's Food Rules)					
i appetite					
ii bedtime snacks					
iii lactobacillus count					
iv carbohydrate intake					
EXAMINATION					
GENERAL APPEARANCE					
i stature					
ii gait					
iii speech					
iv hands					
v habits, activities					
vi mentality, co-operation					
vii height, weight					
HEAD and NECK:					
i head: size, shape, profile					
ii skin: colour, character					
iii hair: colour, character					
iv face: symmetry, asymmetry					
swellings, expression					
v ears, eyes, nose					
vi sinuses					
vii neck: swellings, lesions					
ORAL:					
i breath					
ii saliva: character, amount					
iii soft tissues (record)					
iv gingiva (record)					
v periodontal membrane (record)					
vi calculus					
vii hygiene					
viii home care					
ix caries susceptible (record)					
x restorations (record)					
xi appliances (record)					
xii temporo-mandibular joint					
xiii lymphatic glands					

FIG. 4. Page 2 of diagnosis and treatment chart. 83,62,55,84,66

APPENDIX A.

[illegible]

FIG. 6. Page 4 of diagnosis and treatment chart. 83, 62, 55, 84, 66.

APPENDIX B.

Please Circle Appropriate Answer To Each Question.

A

1—Are you under a physician’s care at present?

Yes

No

2—Do you take any medicine at present?

Yes

No

3—Have you ever had anemia (thin blood)?

Yes

No

4—Were you ever treated for venereal disease (bad blood)?

Yes

No

5—Do you have diabetes (sugar disease)?

Yes

No

6—Has anyone in your family ever had diabetes?

Yes

No

7—Did a doctor ever say you had a goiter?

Yes

No

8—Did a doctor ever treat you for tumor or cancer?

Yes

No

9—Have you any long-continued chronic disease, or infirmity?

Yes

No

10—As a child, did you ever have rheumatic fever, growing pains?

Yes

No

11—Have you ever had malaria?

Yes

No

12—Have you ever had typhoid fever?

Yes

No

13—Have you ever had coeliac disease?

Yes

No

14—Is your mother living and well?

Yes

No

15—Is your father living and well?

Yes

No

FIG. 7. A Sample portion of the New York University Dental-Medical Questionnaire to illustrate general character.⁶⁶

COMPARISON		Cases
1. N.Y.U. Questionnaire as accurate and complete as verbal history.		33
2. " " more " " " than " "		50
3. " " less " " " " " "		4
Total		87

TABLE. 1. Results of a study carried out by Miller to Illustrate efficiency of N.Y.U. Dental-Medical Questionnaire in Comparison with a verbal history.⁶⁶

Infectious Disorders	Physical Disorders	Chemical Disorders	Hormonal Disturbances	Developmental Disturbances	Nutritional Disturbances	Stress Reactions	Miscellaneous Conditions
Measles German measles Mumps Chickenpox Scarlet fever Diphtheria Pneumonia Tuberculosis Syphilis Osteomyelitis Herpetic stomatitis	Fractures	Fluorosis	Hypophyseal gigantism Cretinism Puberty	Hemophilia Osteogenesis imperfecta Cleidocranial dysostosis Hereditary ectodermal dysplasia Harelip Cleft palate Amelogenesis imperfecta Dentinogenesis Supernumerary teeth	Vitamin C deficiency Rickets	Urticaria Rheumatic fever Bruxism	Congenital heart disease

TABLE. 2. Disorders in which Personal Past History Aids Diagnosis.

Infectious Disorders	Hormonal Disturbances	Developmental Disturbances	Stress Reactions	Metabolic Disorders	Miscellaneous Conditions
Tuberculosis	Diabetes mellitus	Dentinogenesis imperfecta Amelogenesis imperfecta Cleidocranial dysostosis Cooley's anemia Erythroblastosis fetalis Achondroplasia Hereditary ectodermal dysplasia Hemophilia Harelip Cleft Palate Osteogenesis imperfecta Albers - Schronberg disease	Angioneurotic edema Rheumatoid arthritis	Gaucher's disease Niemann - Pick disease Hand - Schüller - Christian disease	Mongolian idiocy

TABLE. 3. Disorders Reflected in Family History.

(Continued from page 520)

20. Cheraskin, E. and Langley, L. L. Dynamics of oral diagnosis. Chicago, The Year Book Pub. Inc., 1956.
21. ——— Oral diagnosis. D. Abs. 2:278-9, May, 1957.
22. Cohn, L. Use of the clinical laboratory in oral diagnosis. Internat. D.J. 3:107-123, Sept., 1952. Abstract.
23. Comprehensive diagnosis (Ed.) D. Outlook. 31:187-189, May, 1944.
24. Cooperman, H. H. and Willard, S. B. New approach to the diagnosis and treatment of head and neck syndromes. D. Digest. 62:248-254, June, 1956.
25. Deal, H. J. Palpation as a diagnostic aid in dentistry. The use of sense of touch. D. Stud. Mag. 32:11-15, 38-40, Feb., 1954.
26. Dentists urge full mouth radiograms for extensive reconstruction cases. D. Survey. 26:1392-93, Oct., 1950.
27. Diagnosis and treatment procedures (Ed.) D. Digest. 59:124, Mar., 1953.
28. Diagnosis and treatment. Pakistan Dent. Rev. 7:24, Jan., 1957.
29. Dholakia, H. H. Procedure and method in oral diagnosis. J. Nair Hosp. D. Col. 2:58-62, 1950-51.
30. Eaton, H. M. Responsibility of diagnosis. J. Can. D.A. 22:82-84, Feb., 1956.
31. Eifenbaum, A. Consultation clinic: the use of our five senses in diagnosis. Oral Hyg., 47:53-57, May, 1957.
32. Eifenbaum, A. Consultation clinic. Oral Hyg. 46: 1213, 1217, Oct., 1376-1380, Nov., 1956.
33. ——— Diagnosis in the dental office of the future. Fort. Rev. Chicago D. Soc. 30:9-12, 24-26, Nov. 15, 1955.
34. ——— Diagnosis, key to practice building. Oral Hyg. 44:468, Apr., 1954.
35. Ellis, R. G. Fourth year clinical dentistry notes, University of Toronto, Faculty of Dentistry, 1958.
36. Eselman, J. C. Is the evidence on radiographs reliable? J.D. Med. 11:216-218, Oct. 1956; J. Ont. D.A. 33:8-11, Oct., 1956.
37. Etter, L. E. Radiation dose reduction by higher voltage dental roentgenography, J.A.D.A. 53:305-309, Sept., 1956.
38. Examination and treatment planning. Faculty of Dentistry, University of Toronto, Bulletin No. 544, 1956.
39. Finn, S. B. and others. Clinical pedodontics. Phil. and London, Saunders, 1957.
40. Fixott, H. C. Jr. Diagnostic roentgenographic interpretation. J.A.D.A. 55:62-69, July, 1957.
41. Folstein, I. L. Phenomena of fluorescence as an aid in diagnosis of oral changes. D. Items Interest, 74:738-744, Aug., 1952.
42. Grant, E. A., Prendergast, W. K. and White, E. A. Dental identification in the Noronic disaster. 18:3-18, Jan. 1952.
43. Griffith, N. H. C. Rational case planning. Bul. Nat. D.A. 12:50-53, Jan., 1954.
44. Gullett, D. Fourth year ethics and jurisprudence lecture notes. University of Toronto, Faculty of Dentistry, 1957-58.
45. Haberman, S. Application of the bacteriological and clinical laboratory in oral diagnosis. Baylor D. J. 1:13-19, Mar., 1951; J. Dent. Educ. 15:147-154, Mar., 1951.
46. Hielscher, W. New roentgenographic technic for practising dentists. D. Abs. 2:121-132, Mar., 1957.
47. Hine, M. K., Halitosis. J.A.D.A. 55:37-46, July, 1957.
48. Hudson, D. C. and others. Panoramic X-ray dental machine. D. Abs. 2:440-441, July, 1957.
49. Hunter, H. A. Aids to oral diagnosis. J. Can. D.A. 17:305-309, June, 1951.
50. ——— Third year pathology notes. University of Toronto, Faculty of Dentistry, 1957.
51. Ireland, P. E. Fourth year oral surgery notes. University of Toronto, Faculty of Dentistry, 1958.
52. Importance of radiographs in preventive dentistry. D. J. Aust., 24:117, June, 1952.
53. Importance of proper X-ray studies. N.Y.D.J. 4:102, Feb., 1948.
54. Johnson, J. H. Fundamental steps in oral surgery-oral diagnosis. J. Ont. D.A. 34:6-11, Feb., 1957.
55. Kellen, R. M. Diagnosis and treatment chart. 1958.
56. Kerr, D. A. Biopsy as an aid to diagnosis. J. Mich. D.A. 34:22-24, Feb., 1952.
57. Kresberg, H. and Douglas, B. L. Practical aspect of biopsy technic in the oral cavity. N.Y.D.J. 21:260-261, June-July 1955.
58. Kroll, A. Use of optical loupes in dentistry. D. Items Interest. 69:267-269, Mar., 1947.
59. Leone, N. C. Device for standardizing X-ray techniques. D. Abs. 2:259, May, 1957.
60. Levinson, C. A. Magnifying glass as an aid in examination technic. J.A.D.A. 38:403-404, Mar., 1949.
61. Nite, T. Purpose and precaution in biopsy procedures. J.D. Med. 12:8-11, Jan., 1957.
62. MacGregor, S. Pedodontic case history chart. University of Toronto, Faculty of Dentistry, 1956.
63. Marshall, D. G. Oral diagnosis. J. Can. D.A. 21:230, Apr. 1955.
64. McCollum, B. D. Oral diagnosis. J.A.D.A. 30:1218-1233, Aug., 1943.
65. McIntosh, W. Third year periodontal lecture notes. University of Toronto, Faculty of Dentistry, 1957.
66. Miller, S. C. Oral diagnosis and treatment. 2nd ed. Phil. Blakistan, 1946.
67. Morgan, G. A. Private communication. 1958.
68. Morrey, L. W. Patient radiation exposure in dentistry reduced by aluminum and copper filters. (ed.) J.A.D.A. 54:821, June, 1957.
69. Orban, E. and Wentz, F. M. Classification and diagnosis of lesions of the oral mucous membrane. Bur 55:9-11, Dec., 1954.
70. Perkins, G. T. and Colley, J. E. Use of a new electron device as an aid in oral diagnosis. J.D. Res. 31:513, Aug., 1952. Abstract.
71. Raper, H. R. Influence of X-ray diagnosis on dentistry. D. Survey. 27: 50-52, Jan., 1951.
72. Relch, C. Indication for and the value of laboratory tests in clinical oral pathology. Oral Surg., Oral Med., and Oral Path. 7:1217-1222, Nov., 1954.
73. Schoenfeld, S. J. Use of study casts in dental diagnosis. N.Y. J. Dent. 19:333-338, Oct., 1949.
74. Shroff, F. R. Value of simple aid to diagnosis. N.Z. Dent. J. 44:106-113, July 1954.
75. Seigel, E. J. Private communication. 1957.
76. Silva, C. A. Stereoroentgenograms in dentistry. Oral Surg., Oral Med., Oral Path. 9:757-764, July, 1956.
77. Simpson, C. O. Diagnosis and treatment planning (significant advances). J.A.D.A. 40:655, July, 1950.
78. Snowden, J. W. E. Value of X-rays in dentistry. D. Gaz. 15:81-85, Oct., 1948.
79. Stark, M. Medical laboratory as a diagnostic aid in dentistry. D. Stud. Mag. 30:9-17, Feb., 1952.
80. Sweet, A. P. S. Radiographic misconceptions. Queensland D. J. 6:292-293, Oct., Nov., 1954.
81. Thoma, K. and Robinson, B. G. Oral and dental diagnosis. 4th ed., Phil., London, Saunders, 1955.
82. Ultrasonic photography promises new aid to diagnosis. Ill. D.J. 23:671-672, Oct., 1954.
83. University of Toronto, Faculty of Dentistry, Oral examination and treatment chart, Toronto, 1956.
84. Valuable aid in oral diagnosis. D. Survey. 25:520-526, Apr., 1, 1949.
85. Von Recknow, J. F. Errors in Roentgenography and Misinterpretations of Roentgenograms. D. Abs. 2:8-10, Jan. 1957.
86. Walsh, J. P. High and low aims in oral diagnosis. Aust. D.J. 1:23-25, Feb., 56.
87. Watsky, S. A. Necessity of roentgenographic supplementation of clinical dental examination with analysis of 100 cases. J.A.D.A. 39:34-37, 49, July, 1949.
88. Walthers, M. The dentist's faculty of smell. Dental Abst. 3:42, Jan., 1958.
89. Warren, S. Biopsy in relation to tumor diagnosis. A manual for practitioners. The Committee on Publication of the Mass. Med. Society and Am. Soc. for the control of Cancer. Rumford Press., Apr., 1940.
90. Williams, S. W. Roentgenographic technics. D. Survey, 33:41-43, portrait, Jan., 1957.
91. Worth, H. M. Third and fourth year radiology lecture notes. University of Toronto, Faculty of Dentistry, 1956-58.

Diagnosis and Teamwork in Oral Surgery

An introduction to the first of a series of articles
on some of the less common aspects of this field

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Oral Surgery? Dental Oral Surgery? The terminology employed to indicate the various phases of dentistry is still unfamiliar to many lay people, and if we were to ask the average person the meaning of Oral Surgery they would probably reply that it had something to do with the "pulling" of teeth. In the old days when we were known as Exodontists this was more or less true with the emphasis being placed on the extraction of teeth, alveoloplasties and the treatment of jaw fractures. It is now recognized that oral surgery not only encompasses these functions but also has the wider scope of covering the treatment of oral dysfunctions, and those diseases of the hard and soft tissues of the mouth which are local in nature and not indicative of a wider systemic disease.

Too often the public and even some of our medical associates regard dentistry as a profession involved only in the care and restoration of the teeth. This regrettable tendency to regard the mouth as a separate entity and not as an integral part of the whole human organism must be constantly guarded against. Dentists must think in terms of the whole body and be continually educating the public to the realization that there is a close interaction between diseases of the oral cavity and those of the rest of the body. Most people realize that such an obvious mouth infection as a dental abscess can

have a debilitating effect on the entire system, but as yet are they sufficiently aware of the impairment that other oral diseases and dysfunctions can exact on them?

Conversely, dentists must recognize that our treatment must vary in relation to the general health of the patient and the medication he may be receiving for certain systemic ailments. If the patient is on cortisone therapy, for example, we must recognize the need for consultation with his physician since dosage must be doubled prior to surgery. We must also be alive to the fact that some oral abnormalities are really manifestations of a systemic disease and are therefore primarily medical in concept and require medical treatment. Numerous cases are on record of small oral lesions similar in appearance to benign lesions which have been found, after examination, not only to be malignant but to be secondary manifestation with the primary far removed from the oral cavity. Obviously local treatment of such lesions without proper diagnosis would have been the gravest breach in the obligation and responsibility to our patients. It is evident then, that for the total health care of our patients we must constantly provide not only skilled local treatment but also adequate diagnosis.

Factually, every aspect of dentistry deals with this interaction between the mouth and the rest of the body, but it is in the field of Oral Surgery that this interaction between medicine and dentis-

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try is most frequently and vividly evident. The necessity for intelligent cooperation between the dentist and the physician is paramount with each recognizing the skills and limitations of his own discipline.

Aside from the problems which are clearly dental or medical in concept there are many which require cooperative treatment, and a decision as to who will undertake major team responsibility. These decisions are contingent upon a number of factors:—what hospital facilities are available to the dentist?—what specialists, either dental or medical, are there in the area? For example, in larger centres with a great variety of specialists, extensive cases of hare lip and cleft palate involving the external and internal nose and the nasopharynx may be able to be cared for by a treatment team composed of a plastic surgeon, an oral surgeon, otolaryngologist, general dentist, orthodontist, speech therapist or even a psychiatrist if needed. In smaller centres the team may be limited to the general dentist and the otolaryngologist. Only by assessing such factors in our own circumstances can we ensure that major treatment responsibility is undertaken by the person best qualified by training and frequency of experience, be he general dentist or physician, or dental or medical specialist.

With the proper approach, both personal and professional, this teamwork not only ensures a better prognosis but can increase liaison between the medical pro-

fession and our own. Although oral surgery is a limited field it is a highly specialized one. By ethically adhering to the field of our competence we demonstrate our abilities and encourage our medical associates to call us freely into consultation to apply our special skills when indicated.

Whether or not the problem presented has medical implications or is strictly dental in scope, an unerring and complete examination of the oral cavity followed by exact diagnosis is fundamental to any treatment plan. Thorough examination and diagnosis cannot be overstressed. We must be able to recognize any clinical deviation from normal, and after taking a careful history ensure that all necessary facilities are utilized in arriving at a correct diagnosis. Only on this sound basis can successful corrective treatment be planned. By careful attention to each step we can achieve an ever increasing respect for our profession.

In the case histories to follow in subsequent issues of the Journal, symptomatology and diagnosis have been stressed although evaluation and treatment have been included. One or two cases have been chosen to demonstrate the concept of teamwork, others to illustrate the evaluation of a surgical problem. These seven articles cannot attempt to cover the entire field of oral surgery but are illustrative of some of the less common but highly important diseases and dysfunctions encountered in it.

#1. Bone Graft to the Mandible

A CASE HISTORY

This first case history is not so much a problem in diagnosis as it is a problem in correct evaluation and treatment planning, and the treatment itself is illustra-

tive of teamwork. The patient must be in good health. Diabetes, blood dyscrasias, the presence of local infection, and any of a number of systemic diseases can

delay and sometimes prevent a successful result. The shape and condition of the mandibular fragments, the size and type of graft and the method of immobilization are of the utmost importance in the treatment plan.

This case also illustrates the unfortunate results when a member of one profession invades the field of interest of another as occurred here twenty years ago. Frequency of experience was obviously lacking. Such an accident could be condoned in outlying districts where no dentist was available, but in larger centres with any number of dentists to be called such a resultant dysfunction was unnecessary.

A firm fixation of the graft, as complete an immobilization as is possible and a sterile field are all requisites for a successful grafting to the mandible. Full function was restored after 21 years.

A 52 year old woman was referred by her family dentist for evaluation and treatment of an old jaw fracture.

HISTORY OF PAST ILLNESS

21 years ago she had had the mandibular right third molar tooth removed by her physician. During the operation she suffered a fracture of the jaw. She was given subsequent treatment but the fracture had not healed. 18 years later a graft taken from the left ileum had been inserted by open reduction but again union had not occurred.

HISTORY OF PRESENT ILLNESS

She stated that her teeth were beginning to bother her and several of them were already tender to touch. She had not been able to eat any solid foods for some years and had now decided to have all her teeth removed and dentures inserted.

GENERAL PHYSICAL FINDINGS

She appeared to have a deformity of the face in the right mandibular area.

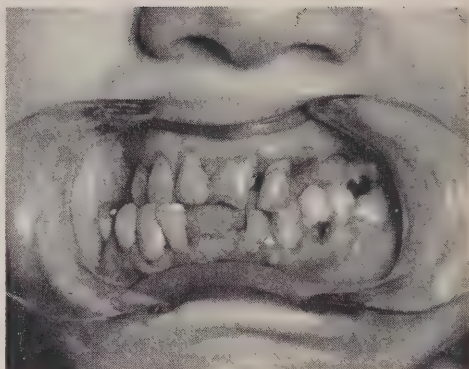


FIGURE 1

Photograph of the teeth when the jaws were closed.

ORAL EXAMINATION

Examination revealed the presence of eighteen teeth with marked alveolar absorption being associated with them all. Caries was rampant with two mandibular incisors being decayed to the gingival margin. When she closed into normal occlusion only a few teeth were in contact. (Figure 1) When the mouth was open the mandible could be easily moved in almost any direction and digital examination disclosed the absence of any horizontal ramus distal to the second right bicuspid.

Radiographic report

This concurred with the visual findings and also revealed that periodontal infection was present around the right bicuspids and the mandibular centrals and laterals. Examination of the jaws revealed that in the region of the right horizontal ramus there was evidence of an ununited fracture. The ends of the fragments appeared smooth, indicating that the fracture was not of recent origin. (Figures 2 and 3)

Note: Much time was spent in discussing with the patient the possibilities of inserting another bone graft. She was enthusiastic that another attempt be made, and afterwards a method of treatment was decided upon. The plan included the

immediate removal of the four mandibular central and lateral incisors so as to minimize the possibilities of infection in the mandible. The two mandibular right bicusps were removed to permit the healing of the sockets and the gingival tissues associated with these two teeth in order to prepare that end of the mandibular fragment for the future fixation of one end of the bone graft. (Figures 4A and 4B). The remaining mandibular cuspids, left two bicusps and second molar were to undergo periodontal treatment as they would later be used as abutments for a cast splint. A similar splint would be cemented to the remaining maxillary teeth, and the two splints wired together to provide the necessary immobilization at the time of the bone grafting.

Operative Notes:

On the day of her original visit

Under general anaesthesia using sodium pentothal, cyclopropane, nitrous-oxide and oxygen the mandibular right two bicusps, and the mandibular two centrals and laterals were removed. The patient was referred back to her family dentist for periodontal treatment of all remaining teeth and to visit my office again on about two weeks' time for observation.

At this next visit healing was progressive in all areas with the exception of the right central where a small degree of supuration was evident. Under local anaesthesia this socket was curretted, a small bone spicule removed, and the patient again discharged after arrangements had been made for periodic visits. At the end of three weeks, healing had been uneventful and was complete. Two dental radiographs were taken of the mandibular right bicuspid region.

Note: Bony regeneration was almost complete in this area and it was felt that in another two weeks the patient would be ready for the insertion of the bone graft. In the meantime she was discharged with the request to return in a week's time for preparation of the splints.

Progress Notes:

Impressions were taken of the mandibular and maxillary teeth and a wax

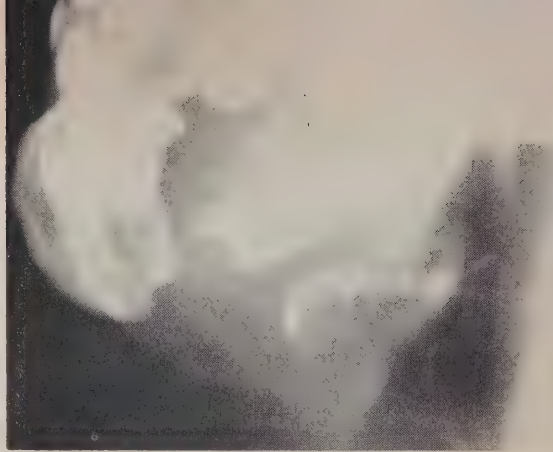


FIGURE 2

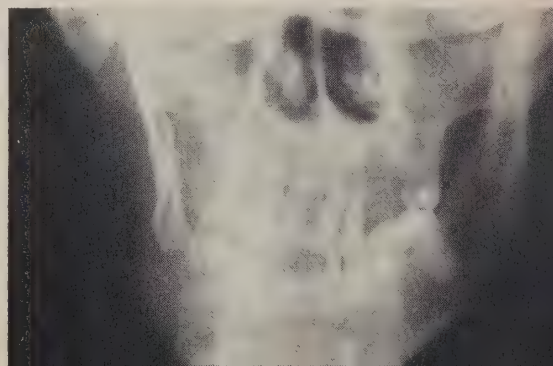
Lateral oblique view showing the ends of the mandibular fragments.

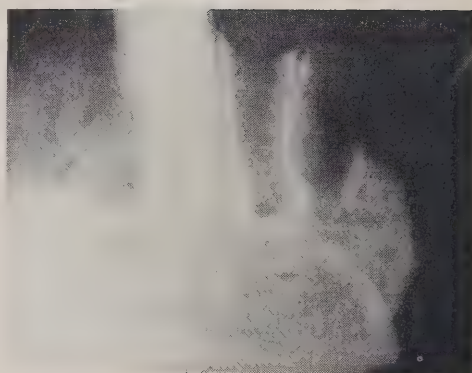
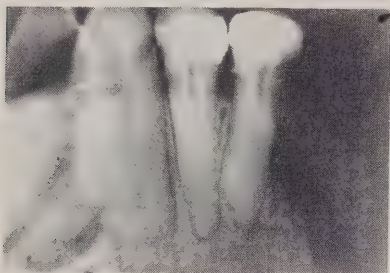
bite taken in order to obtain as close an approximation to centric occlusion as was possible. These impressions were forwarded to the dental laboratory with instructions that two cast silver splints be prepared and that they be "V" notched on the opposing surfaces so that they would lock when in centric occlusion, and also that silver hooks be applied to the outer surfaces of both splints so that wires could be used for future immobilization of the jaws. A few days later these splints were cemented into place and arrangements made for admission to hospital.

Note: As a precautionary measure the splints were inserted but left unwired for a few days prior to admission in order to be sure that the cement mixture was strong enough to hold the splints in place.

FIGURE 3

Antero-posterior view showing the old fracture. Note the atrophy of the right ascending ramus.





FIGURES 4A AND 4B

Pre- and post-operative radiographs of the end of the mesial fragment.

Progress Notes:

Seven weeks from the time of her original visit the patient was admitted to hospital. After all preoperative examinations and tests were found to be within normal limits arrangements were made for surgery on the following day.

Preoperative Medication:

400,000 units of intramuscular penicillin
Morphine grains 1/6
Atropine 1/150

Note: This operation was performed together with a plastic surgeon as a segment of bone from the crest of the ileum was necessary for the grafting. This teamwork helped to lessen the time interval between removal of the graft from the ileum and its attachment to the mandible. The shorter the interval the better chance there is for the establishment of a new blood supply to the graft.

Operative Notes:

The left ileum was exposed and an incision made along the posterior iliac crest. The bone was then exposed and a segment of approximately 1½ inches removed. The wound was closed in layers, with catgut sutures, and the skin incision closed with silk sutures. A pressure dressing was applied.

The mandible was approached and an incision made along the infra-mandibular border. The fracture area was located and the ends of the mandibular fragments exposed. The eburnated ends of both frag-

ments were excised with rongeurs back to where bleeding bone was visible. Drill holes were then inserted through the ends of each fragment and through each end of the bone graft. After the graft had been fitted to the ends of the mandibular fragments by a "step" preparation, the mesial end of the graft was fixed to the mesial mandibular fragment by one interosseous wire which was looped and tied. The distal end of the graft was attached to the distal mandibular fragment by one interosseous wire, and also one circumferential wire to give more stability to the graft. The wires were loosely twisted but not tightened. All wires used were #25 gauge stainless steel. The two intermaxillary metal splints in the mouth were then locked together and wired. The mandible was immobilized.

The wires fixing the bone graft to the mandible were tightened, the ends cut and twisted to face the bone. The graft was now firmly fixed in position. The wound was closed in layers using catgut and silk. A pressure dressing was applied.

Postoperative Notes:

The operation had proceeded smoothly and anaesthetic recovery was normal. Postoperative urinalysis disclosed no abnormalities.

Medication and Diet:

500,000 units of penicillin daily.

Seconal, one and one-half grains at bedtime, daily.

Morphine, 1/6 grains daily when necessary.

Saline mouth wash after feedings.

Diet consisted of high protein, high caloric liquid feedings.

Treatment and Course:

By the third postoperative day there was very little discomfort and the morphine was discontinued. One and one-half grains of codeine were prescribed instead. On the seventh postoperative day all sutures were removed, medication was discontinued and on the following day she was referred for radiographic examination to verify the position of the fragments, (Figures 5 and 6) and then discharged to my office for further treatment. The patient visited my office five times during the following two weeks and on the 27th postoperative day the wires joining the two splints were removed. Careful manipulation revealed very little movement of the fragments but the splints were left in position for two more weeks as a precautionary measure although the wires were left off. She was given strict instructions to adhere to a soft diet. Two weeks later the splints were removed and very little movement of the fragments was apparent.

At this stage the patient complained of pain associated with the mandibular left molar. The dislodgment of the splints apparently injured this tooth so it was removed under local anaesthesia, dividing the tooth and removing it in sections so as to exert as little pressure as possible on the mandible. She was then referred for radiographic examination.

Radiographic Report:

"Wire suture material retains the bone graft in good apposition to fragments of the mandible. Because of the close apposition at the points of junction, evidence of calcified callus formation is difficult to distinguish. The density and architecture of the bone graft is comparable

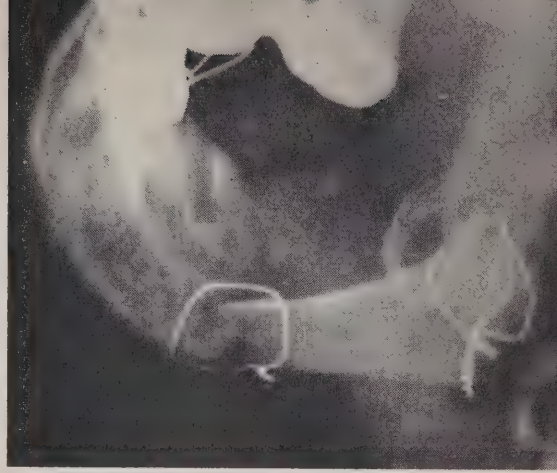


FIGURE 5

to adjacent segments to mandible. There is no evidence of avascular necrosis. Conclusion: Bone graft remains in good position. There is no evidence of calcified callus formation as yet. (Figures 7 and 8).

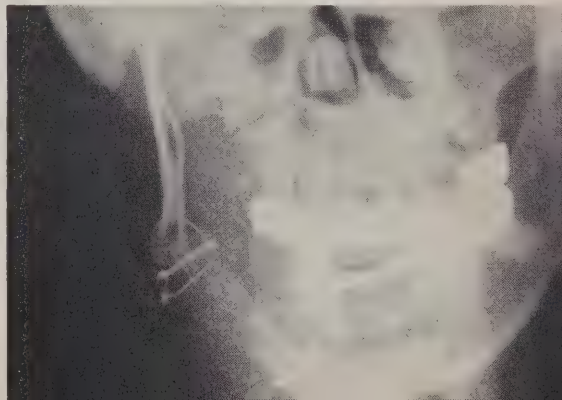
Treatment and Course Continued:

The patient was discharged with the request to return in one month. Two weeks later she visited again and stated that the two mandibular left bicuspid were troubling her. These two teeth were very loose and were easily removed under local anaesthesia.

Note: It was at this stage that consideration was given to the remaining teeth. It was decided that the two mandibular cuspids would be retained as long as possible because it was felt that the pressure necessary in their removal would be an unnecessary gamble after progress had been so successful thus far. After consultation with her family dentist it was decided to remove all remaining maxillary teeth under general anaesthesia and insert an immediate up-

FIGURE 6

Figs. 5 and 6—Lateral oblique radiograph with enlargement, showing bone graft wired into position.



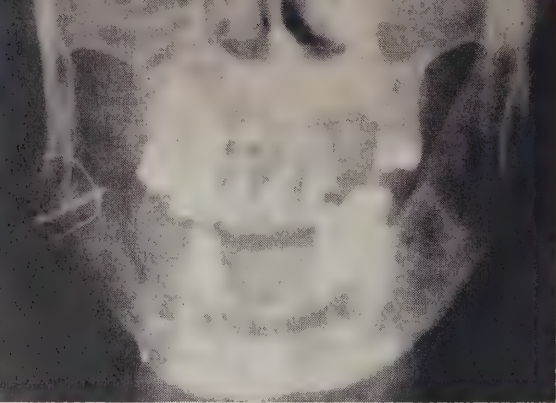


FIGURE 7

Antero-posterior radiograph 10 weeks post-operative. Evidence of callus formation difficult to distinguish. Splints removed.

per denture. The two lower cuspids would be retained for at least another 6 months.

Operative Notes:

Under general anaesthesia using sodium pentothal, cyclopropane, nitrous-oxide and oxygen the remaining seven maxillary teeth were removed and an immediate denture inserted.

Treatment and Course (continued):

There was no noticeable movement of the fragments at this time. The patient was referred to the care of her family dentist with the request that she return in about four months' time.

She visited the office as requested. The mandible was functioning normally. The two cuspids were still in position but increased alveolar absorption was noted, and after being referred for another ra-

diographic examination of the mandible she was advised to visit her family dentist for impressions for the immediate insertion of a full lower denture.

Radiographic Report:

"A bony union would appear to be complete at this time with no fracture line visible. The alignment of the bone graft in relation to the other portion of the mandible would appear to be very satisfactory. Bony architecture appears normal throughout". (Figures 9 and 10). Two days later the cuspids were removed and the patient was discharged to the care of her family dentist.

Comments and Conclusions:

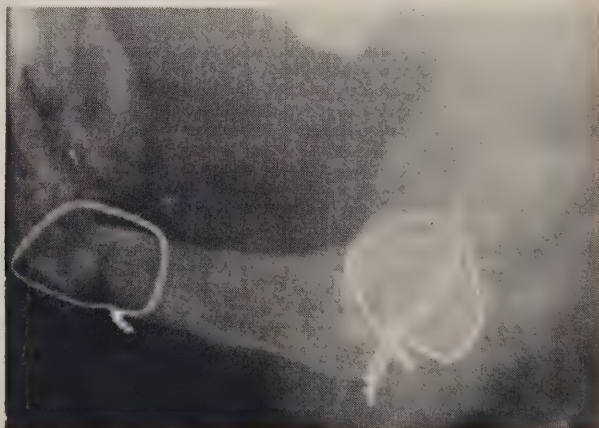
A study of this case is one of comparisons. According to the hospital records a previous graft was laid in position but not fixed. The mandible was immobilized to the maxilla using one wire, and the fragments of the mandible itself were held in position using Roger-Anderson pins.

In this present instance the graft was fixed in position by interosseous and circumferential wiring. The mandible was immobilized to the maxilla using cast metal splints, and the fragments of the mandible itself were immobilized indirectly through the above two methods.

It is my opinion that the satisfactory

FIGURE 8

Lateral oblique view and enlargement. Evidence of callus formation difficult to distinguish.



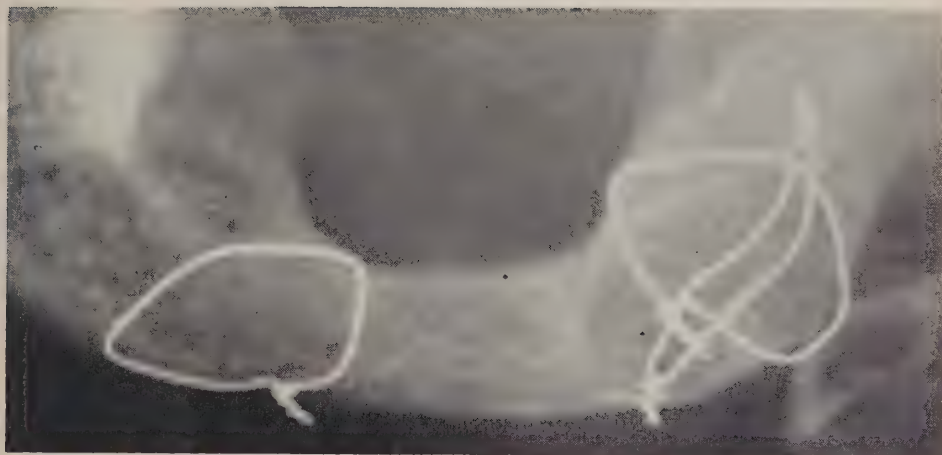


FIGURE 9

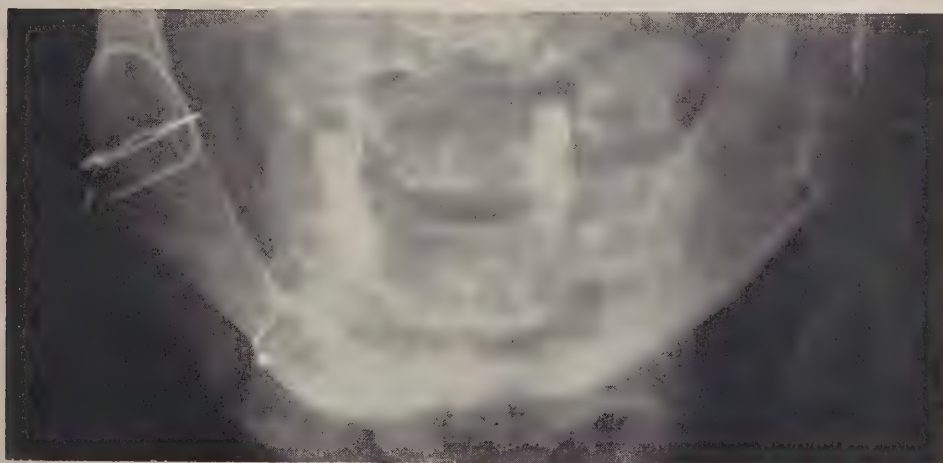


FIGURE 10

Figs. 9 and 10—Antero-posterior and lateral oblique views with enlargement, one year and 9 months post-operative. Bony union is complete.

results obtained in this last operation were attributable to three factors:

1. The graft was fixed in position.
2. Better immobilization of the mandible was obtained using cast splints. Although Roger-Anderson pins previously used might have provided a satisfactory immobilization of the mandibular fragments, one wire was not sufficient to immobilize the mandible to the maxilla.
3. A sterile field was assured by not us-

ing Roger-Anderson pins, thus avoiding any danger of contamination along the route of the pin channels.

I consider that the more effective immobilization achieved in this last operation contributed to the result obtained, but that the main factor in the successful union was the proper fixation of the graft to the fragments, thus ensuring a reliable blood supply to the graft itself.

925 Georgia St. W.

Dentistry in Europe

Just prior to the Rome Congress last fall, Dr. Don W. Gullett, Secretary of the Canadian Dental Association, made visitations to several European countries. He was able, even in a short visit, to develop interesting and factual reports relative to dentistry in these countries. Short visits, however, do not permit complete investigations and consequently Dr. Gullett has entitled this series of reports "Notes on Dentistry in Europe".

The August issue considered Dentistry in Norway, and subsequent issues will contain "Notes" on dentistry in Finland, Denmark, and Holland. This issue presents "Dentistry in Sweden".

Editor.

PART II

Notes on Dentistry in Sweden

DON W. GULLETT, D.D.S., Secretary, Canadian Dental Association

Population: 7,000,000

No. of Dentists: 4,500
(approx. 25% are female).

Ratio to population: 1/1650 approx.

Note: Of the 4,500 dentists about 400 are foreign who have come to Sweden from other countries during recent years. These graduates have been admitted by the government into the Public Dental Service. They are not permitted to engage in private practice but can qualify to take the Swedish examination for licence to practise, which takes 2 to 3 years.

PUBLIC DENTAL SERVICE

History: Shortly after the turn of the present century effort was begun in Sweden towards the establishment of a public dental service. Many plans were presented to the government but owing to high cost involved, action was delayed. The public dental service law came into force January 1, 1939. By voluntary means school dental services were started in 1905, supported by donations from public spirited individuals and to a great extent by the Swedish Red Cross. Gradually the government public dental service is taking over the school dental service.

Administration: The government plan is decentralized and organized very sim-

ilarly to the plan in Norway. In order to receive government subsidies the municipal authorities of each county (25) and the larger municipalities (6) must provide dental clinics where both children and adults are treated. The county councils administer the public dental service. Each district has a dental officer engaged by the municipal authorities but he has to report to the Central Board (Royal Medical Board), and take his instruction from that Board.

Services: Complete dental service is rendered with limitation in respect to orthodontic services. Orthodontists are employed full time but it is not possible to render all necessary services and reference is made to private practitioners.

Coverage: Children from age 3 to 15 are entitled to free service. Ages 7 to 15 are given priority and ages 3 to 6 if time available. Expectant mothers have special right for service. Ages 16 to 19 are given 25% reduction of fees listed on government schedule which is considered to be very low. Public health service dentists are obligated to give 55% of their time to

the 7 to 15 age group. Since the last war the number of children has increased so that really only the 9 to 12 age group is receiving full dental care at present. The dentist in the service is required to work 42 hours a week and 47 weeks a year (4 weeks' vacation). After giving 55% of his time to children he may render services for adults, who pay in accordance with a low government fee schedule. In addition to his salary the dentist may get special pay for giving over 55% of his time to children. He also gets for himself 25% of the adult fees. This latter point was conceded by the government in order to attract dentists into the service.

Personnel: The demand for dentists in Sweden is great. Like all other countries introducing a dental service there was a great shortage of dental personnel. In an attempt to meet the shortage, the government took two actions. First, plans were made to build additional dental schools. (See below "Dental Education"). Second, the government attracted foreign dentists to work in the public dental service, and there are about 400 at present. This latter action was resented by the profession and these dentists do not qualify for private practice but can do so in from 2 to 3 years. 25% of the dentists in the service are female. All personnel in the service is now employed on a full-time basis. The Swedish Dental Association is endeavoring to obtain appointments in the service on a $\frac{1}{2}$ time basis which it is considered would be an improvement. New graduates may go into private practice where the salary is better than in the service. However, the pensions and benefits as civil servants are attractions resulting in most going into the public dental service. Owing to the establishment of greatly increased teaching facilities Sweden expects a large increase in the number of dentists in the near future.

Basis of Payment: The service is organized on a full-time salary basis. The salary range at present is 25,000 to 35,000

kroner (5,000 to 7,000 dollars). This rate is on the same level as university professors which is considered high in Sweden. To some extent the salary can be increased by devoting more time to children or from adult services. Dentists in the service are civil servants with full pension and other benefits.

AUXILIARY PERSONNEL

Technicians: Training schools for technicians are established at Stockholm, Gothenburg and Malmo. These schools are entirely separate from the dental schools but supervised by them. The course consists of 2 years' apprenticeship followed by one year in the school and then one year in a dental laboratory. On completion of this course and after passing an examination successfully a diploma is granted with the right to work in the public dental service. The qualification is not required in order to operate a dental laboratory other than in the public dental service. Dental technicians are employed for the most part in laboratories, with a few engaged by private practitioners. In 1950 a law was passed which has practically stamped out illegal practice. This law gives a heavy fine for the first offence and prison for second infraction, which has proved very effective.

Dental Assistants: A one year course for training dental assistants is operated by the government in the dental schools. One assistant is employed for each dentist in the public dental service.

Dental Hygienists—none.

DENTAL EDUCATION

Dental schools are situated at Stockholm, Malmo and Umea. Plans are drafted for a fourth school to be built at Gothenburg. These are state schools. Some medical schools in Sweden are faculties of universities and others are independent. The length of the dental course is five years. The financing of the schools is entirely by the state.

Education at university level is free and consequently there are no academic fees. Instruments are owned by the state and are loaned to students. Students are required to purchase a few small things such as burs as it has been found impractical to supply them.

The accommodation per class in these schools is as follows: Stockholm—50, Malmö—50 and Umeå—20. The proposed school at Gothenburg is to accommodate 60 students per class. There are two admissions each year (September 1st and February 1st) so that ten classes are actually in operation in each school at all times. As a consequence there are two graduations each year. Academic periods (semesters) are 4 months in length. At the end of each period there is one month interval. If the student has completed his required work satisfactorily this month can be a holiday. However if he is deficient in his standing he is required to continue in an effort to gain the requirement.

The admission requirement is the same for university matriculation in Sweden. I was informed that medicine and dentistry accept only those applicants with the highest academic standing and there are four applicants for every available place. It is said that the health professions are first choice with the great majority of Swedish youth for various reasons. The fact that they are comparatively well paid is probably of most influence.

The half-time staff have a clinic in the school where they are permitted to take

private patients. In the case of half-time members it was found impracticable for them to finance a private office half-time and the school obtains the best of dentists under this system.

COMMENT

The above information is factual subject to omissions which occur when a short time only is permissible for investigation. Following are a few observations made during my visit.

- (1) The standard of dentistry practised in Sweden appeared high.
- (2) The public service is being expanded by the government as rapidly as personnel becomes available.
- (3) The expansion of teaching facilities has been rapid in order to provide personnel. The school at Malmö was opened since the war. The Umeå school is only two years old and the government plans to build another school at Gothenburg. The present schools under the double class method make possible a maximum of 240 graduates a year. I was told that the now proposed school at Gothenburg was not necessary but the government expresses intention to build it. If this school is built the number of potential graduates will rise to approximately 350 a year. Sweden has a population of 7,000,000. (Canada has a population of 16,000,000 plus and the number of graduates annually is running less than 200. The increased accommodation for dental students now being built in Canada gives the possibility of approximately 300 graduates a year).
- (4) The Swedish plan is a nation-wide program of public dental care, the clinics are open to the whole population.

"To spend too much time in studies is sloth; to use them too much for ornament is affectation; to make judgment wholly by their rules is the humour of a scholar. They perfect nature, and are perfected by experience, for natural abilities are like natural plants, that need pruning by study; and studies themselves do give forth directions too much at large, except they be bounded in by experience. Crafty men condemn studies, simple men admire them, and wise men use them, for they teach not their own use; but that is a wisdom without them, and above them, won by observation."

Francis Bacon—Essays 50. Of Studies, 1625.

Twenty-fourth Meeting of the NRC Associate Committee on Dental Research held in Montreal, March 3-4, 1958

For the first time since its inception in 1946 the National Research Council's Associate Committee on Dental Research held its annual meeting outside of Ottawa. This year, on March 3 and 4 the members of the Committee met in Montreal, where they were the guests of the University of Montreal and of McGill University.

Another innovation this year was the open sessions held on the first day of the meeting. During the morning and afternoon of Monday, March 3, meetings were held in the Amphitheatre of the Montreal General Hospital, at which grantees and fellows of the Committee presented reports on their work. Brief summaries of some of the reports are given below. In the evening, the Committee was fortunate in having as its guest Dr. Reidar Soggaes, Associate Dean and Director of Research at the Harvard School of Dental Medicine, who spoke on "Concepts of construction and destruction of bones and teeth" at the Lecture Hall of the University of Montreal. Both open sessions were well attended by the staff and student body of the two dental schools in Montreal, and by members of the dental profession.

For the benefit of those who were unfamiliar with the activities of the Committee, the Chairman, Dr. D. Harold Copp of the University of British Columbia, gave at the afternoon session a brief outline of the historical background and enlarged on the methods by which the National Research Council, through its Associate Committee on Dental Research,

endeavours to promote dental research in Canada.

The Committee's main concern is to develop an interest among dental graduates in research as a career. To this end it has a three-fold programme:

- 1) Dental Research Assistantships which are awarded competitively to undergraduate dental students to enable them to spend the summer in research laboratories;
- 2) Dental Research Fellowships available on a competitive basis to graduates of Canadian dental schools who want training in the investigative, rather than the clinical area; and
- 3) Dental Research Associateships, established in principle for senior people with training in research who will be paid on the same scale as research officers of the National Research Council's own laboratories but will be honorary members of the staff of, and carry out their work in Canadian universities.

In addition, the Committee annually awards grants in aid of research in support of projects undertaken by qualified investigators on the staffs of Canadian universities.

The second day of the meeting was devoted to the usual business session of the Committee. For the fiscal year 1958-59, grants totalling \$42,706 were approved in support of 15 projects already being carried out, or about to be initiated in six universities. These projects range from autoradiographic, histological and physiological studies of the development of the tooth, and investigations into the nature

of cementum and the composition of saliva, to studies, using various animals, of the gingival changes associated with drug administration, of the relation of nutrition to morphology and caries susceptibility of teeth, and of the effect of trauma on tooth movement, dental pulp, growing dentin and connective tissue.

Graduate Dental Research Fellowships were awarded to Dr. R. V. Blackmore, D.D.S. (Alberta, 1943), Dr. J. G. Dale, D.D.S. (Toronto, 1958) and Dr. S. S. Socransky, D.D.S. (Toronto, 1957) for further training in research in the basic sciences related to dentistry.

Summer Assistantships were also approved for five undergraduate dental students, representing as many dental schools, to enable them to work in the laboratories of senior investigators whose work is receiving financial support from the Associate Committee on Dental Research. These Assistantships are tenable for the four summer months and are intended to give dental students some insight into the nature, demands and rewards of research into the fundamental aspects of problems encountered by dental practitioners.

Dr. A. D'Iorio of the Department of Physiology of the University of Montreal and Dr. R. L. deC. H. Saunders of the Department of Anatomy of Dalhousie University were elected to membership on the Committee for a three-year period, as representatives of the basic sciences.

It was learned with regret that Brig. E. M. Wansbrough, who has served on the Committee *ex officio* as the representative of the Royal Canadian Dental Corps, is planning to retire in the Fall of 1958; he has been on the Committee since it was established. The Committee is glad to take this opportunity of publicly expressing its deep appreciation to Brig. Wansbrough for his sustained and sincere interest in the Committee and his many valuable contributions to its work, both as a member of the Committee and, for many years, as a member of its Executive.

The Metabolism of Procaine Hydrochloride and Related Compounds

J. G. Aldous, Dept. of Pharmacology, Dalhousie University.

A method for estimating the toxicity of local anaesthetics has been described. Essentially, the test involves a determination of the maximum rate at which the drug may be administered intravenously to unanaesthetized rabbits without giving rise to signs of central nervous system stimulation. The test is therefore a measure of the rate of overall metabolic disposal of the drug.

When the results of this assay are taken in conjunction with a measure of the rate of hydrolysis by plasma cholinesterase, additional information relating to metabolic characteristics may be deduced.

A test which yields some information about the diffusability of the drug is also described. These tests have been applied to six local anaesthetics, Procaine, Unacaine, Primacaine, Ravocaine, Oxycaine and Xylocaine, and the conclusions drawn from the tests appear to be substantiated by clinical experience.

Investigations Into the Nature of Cementum

K. J. Paynter, Division of Dental Research, University of Toronto.

During the past year a study has been made of the repair and reattachment of interdental periodontal fibres between the roots of the mandibular first and second molars in rats. This was done to study particularly the repair of, and reattachment of fibres to non-cellular cementum. The fibres were severed using an extra-oral surgical approach with minimal injury to the oral epithelium around the tooth. Steps involved in the reattachment have been observed over a period of 35 days post-operative, and certain apparently permanent changes in tissue relationships have been noted. Apical migration of the attached epithelium appeared to be related to the production of an inflammatory reaction in the connective tissues beneath the surface.

In addition, preliminary trials have been made of a technique for sectioning undecalcified plastic-embedded jaw bone and teeth, at six microns. The method looks very promising and detail of both hard and soft tissues is beautifully preserved. It is intended to make use of the method in future studies using radioactive isotopes.

The Effects of Severe Phosphorus Deficiency on Bones and Teeth

D. H. COPP, Department of Physiology,
University of British Columbia.

Rats weaned at 25 days and restricted to a phosphorus deficient diet for 5 weeks developed extreme demineralization of the bones, while the teeth remained relatively well mineralized. The deficient animals were in negative calcium balance, associated with high calcium excretion in urine. The renal clearance of calcium in the deficient rats was 20-30 times that of the control animals.

Despite the severe dietary deficiency of phosphorus, the concentration of this element in the soft tissues remained normal, and the loss of phosphorus was entirely from the skeleton. The femur in the deficient animals contained less than 20% of the calcium and phosphorus present in the controls, and X-ray photographs showed severe osteoporosis.

Blood flow was measured by radiocalcium clearance. It was found that the blood flow was actually increased 2-3 fold in the femur and tibia of the deficient rats, but there was no significant difference in blood flow through the molars and incisors. The calcium and phosphorus content of the teeth was also not significantly reduced.

The kinetics of calcium uptake were determined by the method of Bauer and Carlsson. The exchangeable calcium was similar in control and deficient rats, but the accretion of calcium was sharply reduced by the deficiency. The primary defect in bone appeared to be reduced new bone formation. The accretion of calcium

by teeth was only slightly reduced and the incisors continued to grow and calcify.

It was concluded that the severe phosphorus deficiency caused reduced new bone formation and a diversion of phosphorus from bones to soft tissues, while the teeth remain relatively unaffected. The negative calcium balance was associated with extreme demineralization of the skeleton, which eventually resulted in death of the animals from collapse of the softened rib cage. This severe osteoporosis weakened the bony support for the teeth, while the teeth themselves remained well mineralized.

Effect of Acute and Chronic Trauma on the Pulp and Growing Dentine in the Incisors of Albino Rats

G. J. PERREAULT, and G. PELLETIER, Faculty of
Dental Surgery, University of Montreal.

The albino rat incisor is a continuously growing tooth; consequently the cells responsible for its formation can be altered in their function and elaborate a product different in quality and quantity from what is considered normal. The initial disturbance (produced at the time of the operation) is called the calcio-traumatic reaction. The potentialities of the cells thereafter may be either reduced or resume their normality.

The experiment was designed to evaluate the effects (on the growing structures) of acute and chronic traumas of different intensities. Sodium fluoride in increasing concentration was injected intraperitoneally; pouch granulomas (in which croton oil of varied dosage was introduced) of different sizes were made; molar extractions were performed.

The study of the available specimens shows the following results: the highest concentration of sodium fluoride (maximal dose) and the highest dosage of croton oil in the largest pouch, produced a very sharp initial reaction. All the other specimens of these two groups show reactions of decreasing intensity. The ex-

traction of molars produces a somewhat less severe reaction than either the highest concentration of sodium fluoride or the highest dosage of croton oil in pouch granulomas.

Effects of Diphenylhydantoin (dilantin) on Histamine Changes in Gingival Tissue

L. E. FRANCIS and K. I. MELVILLE,
Department of Pharmacology, McGill University.

Following daily oral administrations of diphenylhydantoin to dogs and ferrets in doses ranging from 10 to 250 mg. and for periods ranging from 14 days to 60 weeks, in different experiments, sections of gingiva were excised under pentobarbital (35mg./kg.) anaesthesia. The material (approximately 250 mg.) was extracted and assayed for histamine activity using the method of Barsoum and Gaddum (J. Physiol. 85: 1, 1935). The histamine activity of gingival sections from untreated controls (six dogs and five ferrets) was also similarly studied. In the dilantin-treated groups, it was observed that (a) there were varying degrees of gross gingival hyperplasia in 15 ferrets, but none in six dogs; (b) all extracts (57 tests) gave strongly positive histamine responses, which were immediate and quantitatively repeatable—control histamine responses were also potentiated by these extracts. On the contrary, in the *untreated control groups* (a) there were no gross changes seen in the gingiva, (b) all extracts (26 tests) showed less marked initial histamine responses, which were slow in developing and decreased or abolished on repetitions—control histamine responses were also diminished or abolished. It is concluded that normal gingiva contains surprising little extractable histamine, but rather some "histamine-releasing substance", and conversely, after diphenylhydantoin there is increased extractable histamine but little evidence of the latter. The findings suggest that gingival changes induced by dilantin might be due to some type of "sensitivity reaction". The problem is being studied further.

The Intimate Mechanism of Mineralization

L. F. BELANGER, Department of Histology and Embryology,
University of Ottawa.

(a) One-day-old chicks have been fed a vitamin D deficient diet for three weeks. Some were then given an oral dose of vitamin D and sacrificed at various time intervals thereafter. The tibiae were X-rayed. Demineralized sections were stained for neutral polysaccharides and sulphated mucopolysaccharides. Others were ashed; others were submitted to *in vitro* Ca^{45} uptake and autoradiographed. Mineralization has reappeared in the treated animals at two days, along with new P.A.S. positive spicules. Earlier, the immature cartilage has rapidly matured morphologically. At the same time, the rachitic matrix, highly concentrated in cation binder, presumably chondroitin sulfate, has lost this material progressively.

(b) As early as five days after the onset of lathyrus feeding, rats and chicks develop a severe neurologic syndrome which renders them unable to feed. The epiphyseal cartilage was metabolically impaired, soft and even detached from the bone. The aorta and stomach did not show any apparent lesions.

Secretion of Protein in Saliva

A. S. V. BURGEN, Department of Physiology, McGill University.

Experiments were done with inorganic iodide which showed that the dog parotid has a very active organic iodide incorporation mechanism which was effectively blocked by methimazole. Subsequent work has shown that up to 40% of the radioiodine secreted in parotid saliva may be protein bound and that the protein binding occurs with great rapidity (<2 sec.). The time course of iodine binding has been examined by collecting single drops of saliva on a moving strip of filter paper and analyzing for total iodine, protein bound iodine, and total protein. The time course of the protein bound iodine secretion follows closely that found previously

for the P₁ fraction of protein secretion and also for the inorganic iodide. It seems that all these properties, iodide concentration, protein formation and iodine incorporation occur in the duct cells. The nature of the iodinated compounds has been investigated by proteolysis followed by chromatography in Butanol-acetic acid and Butanol-dioxane-ammonia systems. The bulk of the radioactivity is due to monoiodo tyrosine (70-80%), about 10% to diiodo tyrosine, and small amounts due to thyroxine and unidentified compounds. Unequivocal identification of labelled thyroxine in the hydrolysates has not been made yet.

Entry of Carbohydrates and Proteins into Teeth as Shown With the Help of Radioactive Elements

C. P. LEBLOND, Department of Anatomy, McGill University.

Previous reports have demonstrated the indefinite stability of a component of the matrix of dentine. This stable substance is probably the dentinal collagen which makes up the bulk of the matrix.

In the course of the present year, ex-

periments carried out in collaboration with Miss Irene Karpishka were designed to examine whether or not the mineral components of dentine were also stable. Three-day-old rats were injected with either Ca⁴⁵ or Strontium⁹⁰ and were sacrificed at various time intervals thereafter, up to six months. The radioactivity of their bones and teeth was examined by radioautography. As expected the rapidly growing incisor teeth no longer contained radioactivity after the 2-month period. In contrast the radioactivity of the molar teeth was shown to persist with little change over the 6-month period. There was a loss of labelled material at the occlusal surface due to attrition (a phenomenon particularly pronounced in the teeth of the upper jaw). If the loss by attrition is disregarded, the stability of the radioautographic reaction indicates that there is no significant change in the mineral content of dentin with time.

Thus, the conclusions obtained with the minerals of dentine as well as those previously reached in regard to the collagen part of the matrix, confirm the classical concept of the stability of dentine.

CANADIAN DENTAL ASSOCIATION RETIREMENT SAVINGS PLAN

An error concerning unit values appeared in the statement published in our July issue. At the inception of the Plan, each unit value was \$10.00. Changes in the three Funds were reflected in new unit values established quarterly. As of May 31st, the correct unit values are as follows:

Government Bond Fund	\$10.20
Corporate Bond Fund	10.16
Common Stock Fund	10.71

ABSTRACTS

Elastic Impression Materials — A Summary of a Recent Conference and Analysis of the Current Status and Recent Research

RALPH W. PHILLIPS, M.S.

The Committee to Investigate Elastic Impression Materials met recently and made certain observations relative to its area of interest. The activities of this group in stimulating research and in bringing closer liaison between the manufacturer, research worker, and practising dentist are commendable.

Many of the variables associated with the rubber based or Thiokol-type impression materials have now been studied and the compositions standardized. Factors such as use of minimum bulk of material, bonding of the impression material to the tray, adequate time in the mouth, and use of double mix techniques are essential to accuracy. The newer silicone materials need similar research of this nature, but their handling characteristics and lack of offensive odour or color make them worthy of serious investigation.

Results are still confusing in regard to the exact comparable accuracy of the Thiokols, silicones, and hydrocolloid impression materials. Much of the controversy may be attributed to the variety of test methods employed, the proficiency

of the investigator and the standards for evaluation. Future research must correlate laboratory data with clinical observations and may eventually evolve a suitable universal in vitro test method. However, all evidence indicates that these materials, properly used, compare favourably.

There are as yet insufficient data on the dimensional stability of the Thiokol or silicone materials. They appear to be somewhat superior to the hydrocolloids. However, the continued polymerization and release of stress do influence stability, and with the lack of information available, it would appear to be sound practice to pour the impression within the first 2 hours.

Research now in progress sheds doubt that an isotonic solution for storage of reversible hydrocolloid can be developed. At present, most investigations with the reversible hydrocolloid impressions are concerned primarily with test methods for measuring certain inherent characteristics and physical properties.

The Journal of Prosthetic Dentistry
Vol. 8 — No. 4 — July 1958

Comparative Effects of Local and Systemic Antibiotic Therapy in the Prevention of Postextraction Bacteremia

I. B. BENDER, D.D.S., et al.

Methods of preventing bacteremia which follows tooth extraction were investigated. Three hundred and fifty-seven patients were divided into control and experimental groups, and eight different types of preoperative antibiotic therapy were compared: penicillin; streptomycin; penicillin-streptomycin mixture; chloramphenicol, administered intravenously; two kinds of antibiotic troches for local administration and two combinations of parenteral antibiotics with troches. Studies included blood cultures, bacterial population counts in the saliva, identification and frequency count of isolated organisms, in vitro sensitivity tests of organisms, and assays of antibiotic level in blood serum saliva. Incidence of bacteremia immediately after extraction and ten minutes after extraction was evaluated, taking into consideration the degree of trauma sustained during the operation.

The hypothesis that the organisms in

postextraction bacteremias are the normal inhabitants of the mouth which gain entrance to the blood stream through the traumatized gingival sulcus was confirmed. The incidence of bacteremia can be reduced by minimizing the operative trauma and by increasing the concentration of antibiotics in the saliva.

The administration of a single antibiotic is of only limited effectiveness. The most effective treatment was a combination of systemic and local therapy as follows: an intramuscular injection of a penicillin-streptomycin mixture one hour before tooth extraction plus an antibiotic troche, to be slowly dissolved in the mouth, taken one-half hour before extraction. The troche contains penicillin, bacitracin, Sulfadiazine, and benzocaine. A slightly less effective troche, for use with penicillin-sensitive patients, contains neomycin, bacitracin, and polymyxin.

Journal of the American Dental Association
Vol. 57 — No. 1 — July 1958

Duocaine — A New Local Anaesthetic Agent — A Clinical Research Report

BRUCE L. DOUGLAS, D.D.S., et al.

Eight thousand injections were given to dental patients for oral surgical procedures, 4,000 with Duocaine and 4,000 with Xylocaine. On the basis of time of onset of surgical anaesthesia, efficiency and untoward patient reactions during and after surgery, both agents were notably similar. Only in the duration of action was there any noticeable difference between the two agents. Duocaine lasting an average of 110 minutes and Xylocaine 200 minutes.

We feel that Duocaine compares favourably with Xylocaine as a local anaesthetic agent for oral surgery. It has the advantages of rapid onset, minimal side effects, profound anaesthesia (pericementitis and mandibular infiltration), similar to Xylocaine. It lasts for a shorter period of time than Xylocaine, a fact which is advantageous in short procedures.

American Dental Society of Anesthesiology
Vol. 5 — No. 6 — June-July 1958

CANADIAN DENTAL ASSOCIATION

ANNUAL CONVENTION

Queen Elizabeth Hotel, Montreal, Quebec

OCTOBER 26th - 29th

The following table clinics will be presented at the convention:

1. DR. MERVYN A. ROGERS—"Local Anaesthesia"
2. DR. R. T. LAMB—"Protective and Retentive M.O.D. Inlay Preparations"
3. DR. YVES DUFRESNE—"Before and After Cases: Complete or Partial Dentures and
DR. JEAN BRUNEAU—"Crown and Bridges"
4. DR. GEORGE SILVER—"Denture Base Aesthetics"
DR. MORTON GREENBLATT—
5. DR. GEORGES NORMAN, M.D.—"*La Coopération de la Profession dentaire dans le
Dépistage du Cancer de la Cavité buccale*"
6. DR. M. LEVITT—"Gold Cores Root Preparations and Direct Wax-up"
7. DR. HARRY ROSEN—"Hopeless Teeth Abutments for Fixed and Removable Partial
Dentures"
8. DR. DAVID SOLOMON—"The Use of Rubber Base and Silicone Base Impression
Materials in Crown and Bridge Work"
9. DR. V. BRUCE MORROW—"The Face-bow Appliance"
10. DR. HERBERT CAPLAN—"Mouth Rehabilitation Cases involving Fixed Splinting and
Precision Attachments"
11. DR. KEITH W. DAVEY—"Intraalveolar Space Maintainers"
12. DR. ROBERT RAPP—"Pulpotomy Technique and Evaluation for Vital Primary
Molars"
13. DR. R. L. SCOTT—"Treatment of Anterior and Posterior Crossbites in Preschool
Children"
14. DR. HOWARD BOYLES—"Crown and Bridges"
15. DR. R. H. BINGHAM—"Complete Treatment for the other 50%"
16. DR. MERVYN GORNITSKY—"Surgical Flap Procedures in Oral Surgery"
17. DR. ROLAND BARIBEAU—"Périodontie et Réhabilitation pour le Practicien général"
18. DR. WILLIAM B. DONOHUE—"Les infections des Espaces anatomiques d'Origine
dentaire"
19. DR. D. C. EATON—"Several Aspects of Endodontic Treatment"
20. MAJOR A. R. RAMSAY—"Removable Partial Dentures with Stress-broken Extension
Bases"
21. DR. ERNEST R. AMBROSE—"Helpful Matrix Applications for Various Restorative
Materials"
22. DR. W. J. JOHNSTON —
DR. D. C. BOURNE ——"The Dentist and the Cleft Palate"
DR. H. OLIVER —
23. DR. J. E. MERRITT—"Full Crown Coverage"
24. DR. T. J. COOKE—"Crown and Bridge Work"
25. DR. ANDRE CHAREST—"Traumatisme Maxillo-Facial"
26. DR. H. W. HART—"Custom Prepared Inter-Maxillary Records"
27. DR. ISADORE BLOOM HYAMS—"Effective Clasp Attachment for the Young Crown"

EDITORIAL

The Need for More Permanent Secretaries

Dental societies in Canada need more permanent secretaries. These officers are required in order to provide the continuity so essential to sustained progress.

We have in our country, including national, provincial, local, and specialty groups, approximately one hundred dental societies. Some are active, others moribund. Some give evidence of a consuming interest in matters which affect the profession and the people it serves. Others are not so motivated.

At a provincial level most dental associations experience an active program, one which provides scientific and social emoluments for the members. Many local societies also furnish their adherents with stimulating and helpful programs.

Providing the efforts of the local society are directed primarily to the development of the annual scientific and social program and do not attempt to delve too deeply into matters of pertinent socio-economic concern, a constantly changing executive or directorate is probably of no great significance. When legislation, development of plans for dental care, sustained and active voluntary public health programs, long range planning, and the like are considered, the effectiveness of transitory bodies is diminished.

Most of the significant developments in dentistry did not occur precipitously. Goals were established, the achievement of which often consumed many years of

time and effort. The policies promulgated around the conference table required sustained follow-up effort in order to activate them. In most instances the administrative activities necessary to consummate these conference table proposals or policies became the responsibility of a secretary.

The secretary of a dental organization has a significant role to play in his association's affairs. Not only is he charged with the duty of administration but rightly or wrongly he assumes an important function relative to the development of policy. What is more natural than for a person who has become the repository of information gleaned from his direct association with the records of the organization, who is required in the discharge of his duties to share views with many in related or associated fields, and who sees first-hand the results of presently prevailing policy or conversely a lack of development because of the absence of policy, to add a most persuasive voice when new policies are being created or old ones amended or discarded?

The organizational foundation of the Canadian Dental Association has made provision for certain sections and three are presently constituted. There are sections on Orthodontics, Oral Surgery, and Dentistry for Children. The latter, in contradistinction to the other two, is composed of a membership drawn both

from the ranks of paedodontists and general practitioners alike. The periodontists will be seeking recognition as the fourth section at the forthcoming meeting of the Board of Governors.

With respect, we do not believe that the contributions of these sections to the good and welfare of dentistry, generally, will be significant until such time as their enunciated objectives and approved policies are synthesized into positive performance through sustained and concerted action.

The editor of this Journal, immodestly perhaps, considers himself reasonably well informed of the various personalities charged with the conduct of our profession's affairs. Yet if we had, at this moment, to communicate with the secretary of a section we would be hard pressed in respect to two of the sections, to know to whom we should send our correspondence. Even if a name were recorded we would not be entirely overcome with confidence that this officer had not been changed within the interval between the submission of his name and the need to write to him.

Let us be realistic too, and admit that abilities vary. An excellent secretary this year, may be succeeded by one whose lack of interest or general incompetence make him unsuitable for the task.

What is to prevent a section or a local dental society for that matter, from selecting from within its ranks the most capable member possible and appointing him to the position of secretary for a term of at least five years? What is to prevent a section from providing such an individual with some honorarium to share with him a portion of the financial sacrifice he will make by assuming the important and time consuming duties? What is to prevent a section from making it possible for the secretary to obtain adequate stenographic assistance to carry out the routine clerical and typing duties?

We hope the answer to these questions is not 'money'. The annual dues are a ridiculously small fraction of that paid by most of the members to their Golf or Curling clubs. Rather than being a question of 'can we afford it?' it is perhaps more pertinent to suggest 'can we afford not to?'.

Sound policies, followed by sustained efforts to implement these policies have been shown to result in advancement. It seems only logical then, to establish, on a reasonably permanent basis, an officer who can strive not only to implement the objectives but through attained knowledge, information and experience can offer important opinions when new developments are proposed.

I hold every man a debtor to his profession.—Francis Bacon (1561-1626)

Every man is a debtor to the world: to his parents; his schoolmaster; his friends and employers. He owes them his existence; his knowledge; his happiness and his daily bread.

To his profession, he has another debt: that due to generations past whose integrity and skill have given his calling the reputation it enjoys. To them he owes his status as a worker and a thinker.

'Profession' carries a wider meaning now than it did once; and professional status, in common talk, is extended to many functions in industry and commerce. But it is not won lightly; a long record of public responsibility, and private service, must come first. How can such a debt be repaid? Only by handing on still higher standards—and a higher status—than those of yesterday, to the makers of industry tomorrow.

BOOK REVIEW

Oral Surgery — 3rd Ed. Prepared by Kurt H. Thoma. Published by: The C. V. Mosby Co. Pages: 1607. Price: \$27.50.

This voluminous text is written primarily for the oral surgeon. However, as a reference text for the general practitioner it is of inestimable value. The book is written in a clear and concise manner,

illustrated by photographs and coloured drawings which plainly demonstrate the surgical procedures.

Several new chapters have been added to past editions, notably pharmacology, transplantation, x-ray interpretation.

The book is highly recommended as a reference text in diagnosis and as a complete treatise for the practice of oral surgery. D. M. Tanner.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

ADDITIONS

CARR, J. D.: History of the Central College of Dentistry, Indianapolis, Indiana 1897-1905. 44 p. Mimeo. \$3.00.

DENTAL CLINICS OF NORTH AMERICA, July 1958: Symposium on the interrelationship of oral and systemic disease. Philadelphia. Saunders, 1958. Pages 277-543, illus.

FINCH M.: The third set. London, Dobson Books Ltd., 1957. 192 p. \$2.50.

GEHL, D. H. & DRESDEN, O. M.: Formerly by Schlosser, R. O. Complete denture prosthesis. 4th ed. Philadelphia, Saunders, 1958. 542 p. illus. \$11.00.

MARSHALL, M. D.: The physician's own library; its development, care and use. Springfield, Charles C. Thomas, 1957. 87 p. \$3.25.

NAGLE, R. J., & SEATS, V. H.: Dental prosthetics; complete dentures. St. Louis, Mosby. 1958. 532 p. \$11.50.

NEW YORK UNIVERSITY COLLEGE OF DENTISTRY: Periodontics for the general practitioner; a symposium presented before the Section on Periodontics, 97th annual session A.D.A. Oct. 3, 1956. Rep.

fr. the J.A.D.A. Vol. 55, No. 5, November 1957.

ROCKERT, H.: A quantitative x-ray microscopical study of calcium in the cementum of teeth. (Acta Odontologica Scandinavica, Col. 16, Sup. 25.) Gothenburg, 1958. 68 p. illus.

SHAFER, HINE & LEVY: A textbook of oral pathology. Philadelphia, Saunders 1958. 715 p. illus. \$15.00.

SLACK, G. L.: A world survey of the teaching methods in children's dentistry. Liverpool, School of Dental Surgery. 1957. 94 p.

TRELEASE, S. F.: How to write scientific and technical papers. Baltim Williams & Wilkins, 1959. 185 p. \$3.25.

TRILLAT, J. J.: Recent applications of electron diffraction. Reprint. the Annals of the New York Academy of Sciences, Vol. Art. 6, Pages 165-185. Dec. 26, 1956. illus.

WEST, R. ANSBERRY, M., & CARR, A.: The rehabilitation of speech. New York, Harper & Brothers, Publishers, 1957. 335 p. \$5.50.

WHEELER, R. C.: A textbook of dental anatomy and physiology. Philadelphia, Saunders, 1958. illus. 405 p. \$8.50.

THE PROVINCES

BRITISH COLUMBIA

Joint Meeting of C.P.H.A. and Western Branch A.P.H.A.

The Joint Meeting of the Canadian Public Health Association and the Western Branch, American Public Health Association, took place in Vancouver, May 19 - 23, 1958

The executive for the Dental Section for 1958 - 1959 is as follows: Chairman, Dr. Clarence Bouillon, Montreal; Vice-chairman, Dr. C. A. McCabe, Outremont, P.Q., and Secretary, Dr. E. Vinet, Montreal.

Economic Survey

The B.C. Dental Association engaged the firm of Stevenson & Kellogg, management engineers, to project a completed statistical economic survey of the dental profession in British Columbia. The action was endorsed by the College of Dental Surgeons and the study was made by Dr. J. C. Hewson who spoke at the annual meeting of the association.

Utilizing the 1955 fee survey of the C.D.A. and the 1956 fee schedule of the B.C.D.A., the charge was lower than the first estimate submitted by the business consultants.

A brief outline of the scope of the survey follows:

1. Evaluation of the work elements of the professional activities of a dentist in B.C. by factor analysis and comparison method.
2. Comparison of work demands of a dentist with positions in industry and business.
3. Analysis of current income of B.C. dentists to indicate relationship of incomes to those of comparable positions in business and industry.
4. Consideration of the economic position of dentists which has a bearing upon the question of fee structure.

The survey was a fact-finding prelude to possible negotiation with government bodies on fees should they be covered by a health services plan.

D. H. M.

MANITOBA

First Dental College in Manitoba

Manitoba's first dental college got its formal start on Wednesday, July 9th as Hon. Stewart McLean, minister of education for the province, turned the first sod.

Site of the building is between McDermot and Bannatyne Avenues, Winnipeg. The building is due for completion in the fall of 1959, and will cost \$1,135,000.

On hand for the official opening were Dr. H. H. Saunderson, president of the University; W. J. Condo, comptroller; Dean J. W. Neilson of the new faculty and representatives of dental and medical groups. The officially designated representatives were as follows: Dr. W. J. Riley, Canadian Dental Association; Dr. J. E. Abra, in absence of President, Dr. T. J. Cooke, Manitoba Dental Association; Dr. M. J. Averbach, Winnipeg Dental Society. Individuals invited were: Dr. M. H. Garvin, Past President, Canadian Dental Association, and recipient of LL.D. degree from University of Manitoba, 1957; Dr. H. J. Merkeley, Past President, Canadian Dental Association; Dr. K. M. Johnson, Immediate past president, Canadian Dental Association; Dr. T. J. Cooke, President, Manitoba Dental Association; Dr. J. F. Morrison, Retired Secretary-Registrar, Manitoba Dental Association; Dr. L. G. Bell, Dean, Faculty of Medicine; Dr. L. O. Bradley, Medical Administrator, Winnipeg General Hospital; Dr. J. M. Grahame, A.D.A. Representative to Committee on Selection. Also invited were the Board of Directors, Manitoba Dental Association and Members of the Academic Staff of the Faculties of Medicine and Dentistry.

NOVA SCOTIA

Dalhousie Dental Students Society

Following their annual spring custom the Dalhousie Dental Students' Society were hosts to the members of the graduating class. The enjoyable function took the form of a reception and dinner.

One of the highlights of the evening was the presentation of a gift of money from the Faculty members and the Halifax County Dental Society, to Miss Gladys Littler, Secretary to the Dean, who is retiring after some forty-six years of devoted service to the University. Miss Littler served under six deans and is beloved by Faculty members and students alike. Previous to the meeting, the students presented Miss Littler with a set of travelling cases. We all wish her many years of happiness and good health.

Dr. Kenneth Kerr, who has been on leave from the University in order to take a year's post graduate study in Prosthetic Dentistry, became actively associated with the teaching staff on September first.

H. M. E.

ONTARIO

Grey-Bruce-Dufferin Dental Society

The Grey-Bruce-Dufferin Dental Society held its annual golf tournament and boat cruise at Owen Sound on June 11th.

The election of officers of the society was also held in connection with the gathering.

The 18 hole competition played over the Owen Sound Golf and Country Club course, was won by Dr. H. Halderson of Toronto who scored 80. Dr. J. Kennedy of Mount Forest scored 82 for second place.

A report of the nominating committee was accepted. Elected were, Dr. Harold Bedell of Harriston, president; Dr. R. G. McKee of Owen Sound, vice-president, and Dr. G. H. McKee of Owen Sound, secretary.

Directors elected included, Dr. Stewart, Thornbury; Dr. Sudden, Dundalk; Dr. Campbell, Paisley; Dr. H. Legate, Owen Sound, and Dr. Hardman, Wiarton.

Dr. Wesley J. Dunn, Registrar-Secretary of The Royal College of Dental Surgeons of Ontario addressed the Annual Meeting following his introduction by Dr. M. C. G. Bebee, president of the board.

Dr. Milton N. Bye presided.

New Faculty of Dentistry Building

The Cornerstone-laying ceremony for the new Faculty of Dentistry building, University of Toronto, took place on July 29th, 1958 at 3.30 p.m. Participants in the ceremony were the Hon. Leslie M. Frost, Ontario Prime Minister, who gave a short talk, Col. W. E. Phillips, chairman of the university board of governors; Dr. Samuel Beatty, chancellor of the university; Dr. Claude T. Bissell, president of the university, who also gave a short talk; Dr. R. G. Ellis, dean of the Faculty of Dentistry and Hugh L. Allward, architect, who presented a silver trowel to the Prime Minister.

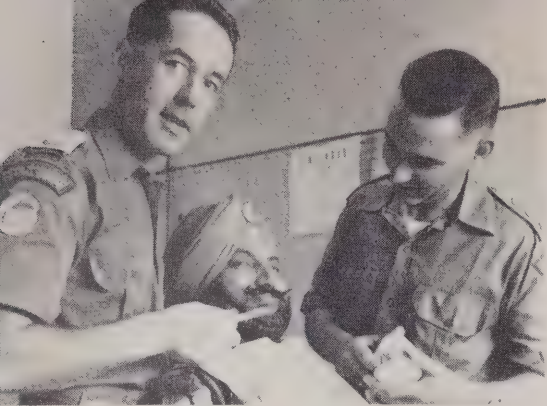
The Cornerstone contained a copper box with the newspapers of the day; university directory, 1957-58; faculty calendar; "Varsity News" May, 1958; blank diploma for D.D.S. degree; copies of dental professional journals; a dollar bill; samples of Canadian coins and stamps, and a photograph of the present dental building at 230 College Street.

The five-storey building will cover an entire central city block bounded by Elm, Chestnut, Edward and Centre Streets. The cost will be close to \$6 million, including \$700,000 for land; \$1 million for scientific and clinical equipment, more than half of which is for dental operating units; \$900,000 for other laboratory and office furnishings and equipment; architects' fees and other expenses. The bulk of the cost is provided in Ontario Provincial Government budgets; \$1,000,000 allocated in each of past five budgets.

The new building will provide for ultimate undergraduate enrolment of 725, compared with 417 at past session. The number of graduate students will be increased. A graduate class of 125 students is predicted for 1963 by Dr. Ellis. This fulfills recommendations made in the report of the Ontario Health Survey Commission (1950) which called for a minimum of 120 dentistry graduates in the province yearly.

The building is to be one of the most modern dental teaching units in the world. There are 103,300 square feet of space available for teaching and research. One lecture room is large enough for three classes (375 students), and two lecture rooms, each seat 125.

Occupancy is scheduled for the fall of 1959.



Major H. R. Kettys (left) and Captain K. N. Munro who are serving in the Middle East with the United Nations Emergency Force.

THE CORPS

Brigadier E. M. Wansbrough to Attend F.D.I. Meeting in Brussels

Brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., Q.H.D.S., Director General of Dental Services, sailed for Europe on July 14 to inspect No. 35 Field Dental Unit R.C.D.C.(R) in France and 4 Field Dental Company R.C.D.C.(R) in Germany.

During his tour Brigadier Wansbrough, as President of the Armed Forces Dental Services Commission, will attend the meeting of the Federation Dentaire Internationale in Brussels.

Command Dental Officer Appointed

Army Headquarters has announced that Lt.-Col. T. L. Marsh, C.D., of Ottawa, has been appointed Command Dental Officer, Quebec Command and Commanding Officer of No. 15 Dental Company, Montreal. The appointment was effective August 15, 1958.

Lt.-Col. Marsh was born in England. He attended the University of Toronto and graduated in 1932 with a D.D.S. degree. He attended the University of Toronto again in 1952 and received a D.D.P.H.

Lt.-Col. Marsh enrolled with the C.D.C. in May 1942 and served in Canada and the United Kingdom during the Second World War. Since his appointment to the Canadian Army (Regular), Lt.-Col. Marsh has held appointments as an instructor at the R.C.-D.C. School, D.G.D.S. Branch at Army Headquarters and Commanding Officer of No. 1 Field Dental Unit in Germany. His most recent appointment was as Dental Public Health Officer at Army Headquarters, Ottawa.

Mrs. Marsh and their two children now reside in Montreal.

Major D. H. Protheroe has replaced Lt.-Col. Marsh as Dental Public Health Officer in the Directorate of Dental Services, Army Headquarters, Ottawa.

Major Protheroe received an M.P.H. degree from the University of Michigan in June. The appointment was effective June 21, 1958.

Major R. E. Brown Promoted

Army Headquarters has announced the promotion of Major R. E. Brown to the rank of Lieutenant-Colonel effective August 16, 1958.

Lt.-Col. Brown was born in Toronto on September 30, 1914. He graduated from the University of Toronto with a D.D.S. in 1939.

Lt.-Col. Brown enrolled with the C.D.C. in August, 1942, and has served continuously since. He saw service in Newfoundland during the war. Lt.-Col. Brown was stationed in Central Command from 1946 until 1951. In March 1951 he commenced a year's service in Korea. He was again posted to Eastern Command on his return to Canada from The Far East, following which he served in Germany with No. 27 Field Dental Unit from November 1955 until November 1957. Lt.-Col. Brown is at present stationed in H.M.C.S. Naden, Esquimaux, B.C. Mrs. Brown and their two children reside in Victoria.

Promotions

Army Headquarters has announced that the following Captains have been promoted to the rank of Major on the dates shown:

Captain E. D. McDermott—June 15, 1958

Captain R. G. Darling —June 30, 1958

Captain J. J. Walker —June 30, 1958

Major McDermott was born in Toronto on May 26, 1924. He graduated with a D.D.S. degree from the University of Toronto in 1952.

Major McDermott enrolled in the R.C.-D.C.(R) as a Second Lieutenant in September, 1951 and on graduation in 1952 was promoted to Captain and posted to Prairie Command. Major McDermott is stationed at Rivers, Man.

Major Darling was born in Cache Bay, Ontario on February 7, 1927. He graduated from the University of Toronto in 1952 with a D.D.S. degree.

Major Darling enrolled in the R.C.D.C. (R) as a Second Lieutenant in September, 1951 and on graduation was promoted to Captain and posted to Central Command.

He proceeded overseas in November, 1955 and served with 4 Field Dental Company in Germany until 1957. Since his return to Canada he has been stationed at Camp Borden, Ontario. Major Darling is married and has one child.

Major Walker was born in Toronto on September 17, 1925. He graduated with a D.D.S. degree from the University of Toronto in 1952.

Major Walker enrolled in the R.C.D.C.(R) in September, 1952, and on graduation was promoted to the rank of Captain and posted to Prairie Command. Major Walker is at present employed at R.C.A.F. Station, MacDonald, Man. He is married with three children.

Army Headquarters has also announced that the following Lieutenants have been promoted to Captain:

Lieutenant W. J. Bignell

Lieutenant J. H. Quackenbush.

Captain Bignell enlisted in the Corps in October, 1939, at Montreal. He was commissioned as an administrative officer in July, 1953. He served in the United Kingdom and the Middle East during the war and is

currently employed as the Corps representative in the Directorate of Army Personnel at Ottawa. Captain Bignell is married with one child.

Captain Quackenbush enlisted in the Corps July 2, 1940. He served in Canada and the United Kingdom during the war. He was commissioned as an administrative officer in June, 1953, and is currently employed at Trenton, Ontario.

Captain Quackenbush is married with two children.

Major C. L. Johnston Laid to Rest

The Corps has been informed of the sudden death of Major C. L. Johnston, C.D., at Toronto, Ontario on July 24. Major Johnston graduated from the University of Toronto in 1931. He was commissioned in the C.D.C. in February 1941 and proceeded overseas in 1942. He saw service in the United Kingdom, Italy and Northwest Europe, returning to Canada in October 1945. Major Johnston served with the R.C.D.C. (R) in Ontario and Western Canada. He retired from the R.C.D.C. October 1, 1956 and until his untimely death was employed by the Corps as a civilian in Toronto.

GENERAL NEWS

New Amendment to TV Code Dentist-Actor Commercials

The portrayal of dentists, physicians and nurses to promote products in television commercials is prohibited in a new ruling by the Television Board of the National Association of Broadcasters. The familiar "man in the white jacket" was barred in an amendment to the N.A.B.'s Television Code approved June 18. A new section of the code states:

Dramatized advertising involving statements or purported statements by physicians, dentists or nurses must be presented by accredited members of such professions.

The code insignie is displayed by the country's three national networks and by 308 individual television stations. A columnist of the Washington Post and Times-Herald commenting on the action, noted that "if the Television Board enforces the

new ruling, a lot of actors are going to be unemployed." Previously, it was permissible for actors depicting members of the health professions to promote products on television commercials providing the word "dramatization" was flashed on the screen for at least 10 seconds. The A.D.A. has worked closely with the N.A.B. on the matter of actors portraying dentists in advertising.

Fluoridation Not Controversial

Hugh R. Jackson, president of the National Social Welfare Assembly, has endorsed water fluoridation as "actually one of the least controversial issues to come before the public in some time."

Mr. Jackson, who is also vice-president of the Advertising Club of New York, president of the Better Business Bureau of New York City, and a director of United Community Funds and Councils of America,

spoke before the annual meeting of the Committee to Protect Our Children's Teeth, held on May 28th, at the Women's City Club, 277 Park Ave., New York.

He charged some opponents of the measure with "tampering with the truth and misrepresenting facts" to create public doubts and fears.

He said the effect of water fluoridation in safely preventing about 60% of dental decay "in light of the overwhelming majority of expert scientific judgment."

Citing endorsement of fluoridation by a wide range of national, state and local scientific organizations, including the American Medical Association and the American Dental Association, Mr. Jackson expressed the opinion that it should be "perfectly simple" for laymen "to accept the virtually unanimous approval of those who through their scientific and professional background and experience are best qualified to advise us of the advantages and possible disadvantages."

"Yet the voices of a relatively few people, including some whose professional reputation and standing in no way qualify them as leaders of thought or advice in this field, have succeeded in creating doubts and fears in the public mind and have created the impression that this is a highly controversial issue," he added.

He said that some people "have sincere and serious questions on this subject," but

he cited examples of methods employed by some anti-fluoridationist groups such as "misrepresenting through incomplete disclosure," "false use of endorser's names" and "false and misleading advertising."

The Committee to Protect Our Children's Teeth is a citizens' organization, under the chairmanship of Dr. Benjamin Spock, for the purpose of carrying out a public information campaign on water fluoridation.

42 U.S. Dental Schools Now Fully Approved

Of the U.S.'s 47 dental schools, 42 have now been fully approved in the Association's accreditation program, it was announced recently by Dr. Harold W. Oppice of Chicago, chairman of the A.D.A. Council on Dental Education. The report was made as the School of Dentistry, University of Texas, Houston, was elevated from the status of provisionally approved to fully approved by the council. Full approval was also given to the operation of the freshman and sophomore program at the two-year-old College of Dentistry, Seton Hall University, Jersey City. For dental hygiene schools, the new program at Browne County Community College, Binghamton, N.Y., was given provisional approval. There are 34 dental hygiene schools of which 31 have been fully approved.

IN MEMORIAM

Herbert Ferguson Blair Black—Dr. Herbert Ferguson Blair Black of Toronto, Ontario, died on June 30th, 1958.

Dr. Black was born in Kingston, Ontario in 1892 and received his early education in Kingston. He graduated from the Royal College of Dental Surgeons in 1915.

He practised in Toronto from 1915 to 1940 when he joined the R.C.A.F. Dental Corps, he remained with the R.C.A.F. until 1945. Dr. Black resumed his practice in Toronto in 1945 until 1958.

He was a member of the Knights of Columbus.

Surviving are his wife, Frances, 2 daughters, Georgina and Mrs. J. Calarco, and a son, Allan, all of Toronto, also a brother, Dr. Neil Black of Utica.

Harold Onsum Johnsen—Dr. Harold Onsum Johnsen of Essondale, B.C., passed away on July 7 at the age of 60. He was born in Norway and practised there for ten years before going to Minneapolis for a year's post-graduate course.

After practising in Alberta for a year, he went to British Columbia and for ten years practised in Prince Rupert. While there he was instrumental in founding the Prince Rupert Ski Club. He was always active in church work and was a great lover of music, having taken part in several operettas both in Prince Rupert and Vancouver.

In 1941 Dr. Johnsen moved to Oliver, B.C. He served in the army from 1943 to 1945, and after joining the civil service in 1951, he was on the staff of the dental clinic at the Provincial Mental Hospital until his death.

Surviving are his wife, Olive, two daughters, Mrs. R. Hooper and Mrs. H. Erickson, two grand-daughters, and two brothers and a sister in Norway.

Andrew Clifford Jack—Dr. Andrew Clifford Jack of Montreal, died on June 20th, he was 83.

Dr. Jack was born in Montreal in 1875, and studied dentistry at McGill in 1893 and 1894, completing his studies in London, Ontario. He was past president of the Quebec Dental Association and taught dentistry at McGill for many years. He retired in 1940.

He was a keen sportsman, showing interest in football in his early days, and in fishing later on. He also belonged to a rowing team which won the all-Canadian Fours, was a life member of the MAAA, and an honorary member of the Green Lake Fish and Game Club. He was a former member of the Royal Montreal Curling Club and the Beaconsfield Golf Club.

Dr. Jack was predeceased by his brother, F. B. Jack, his sister, Bertha, and a son Clifford. He is survived by his wife and two children.

Arthur M. Johnston — Dr. Arthur M. Johnston of Windsor, Ontario, died on July 13th, 1958.

He was born in 1881. Dr. Johnston graduated from the Royal College of Dental Surgeons in 1904 and opened his practice in Windsor.

He was an Honorary Member of the R.C.D.S.

Surviving are two sons, Murray of Kitchener and Robert of Lakeside, Quebec.

John Stringer Le Gallais—Dr. John Stringer Le Gallais of Barrie, Ontario died on July 29th, 1958.

He was born in November 1929 at North Bay, Ontario, and received his early education at Englehart and Schumacher. He graduated from the University of Toronto in 1955, and practised in Barrie.

Surviving are his wife, Marjorie, Mother and Father, of North Bay, and a sister, Mrs. H. C. This of New Liskeard.

Samuel George Clemence—Dr. Samuel George Clemence died on June 14th in South Gate, California at the age of 92.

Born at Bowmanville, Ontario, Dr. Clemence was a graduate of the Chicago College of Dentistry. He went to Victoria, B.C. in 1893 and practised dentistry in that city for 52 years until 1945. He retired to California in 1947.

In Victoria he was a prominent member of Metropolitan United Church, serving on the board of stewards and as an usher.

He is survived by a son, Jack, two grandchildren, and three sisters.

John Carleton Kelly—Dr. John Carleton Kelly of Plattsburg, N.Y. died on June 23rd, he was 43.

Born in North Creek, N.Y., he lived in Plattsburg most of his life. He was a graduate of McGill University, Faculty of Dentistry, and of Georgetown University. He was well known in Montreal. He spent a year of residency in the oral surgery department of the Montreal General Hospital in 1941, after his graduation from McGill.

Dr. Kelly practised in Plattsburg since 1946. He served in the U.S. Army Dental Corps during the Second World War.

He is survived by his wife Betty, and two daughters, Carla, 12, and Jill, 6.

Frederick Barkham Bingham—Dr. Frederick Barkham Bingham of Pilot Mound, Manitoba, died on June 9th at Pilot Mound Hospital at the age of 82.

Dr. Bingham was born in Durham County, Ontario, and went west to Pilot Mound in 1908. He practised dentistry for 42 years, retiring in 1951. He was a member of the Pilot Mound United Church and was an honorary member of the session.

He is survived by his wife, Florence Mae; two sons Hugh and Clinton; a daughter Mrs. N. Fisher; five grandchildren, and a sister, Mrs. M. Jamieson.

J. A. Graham — Dr. J. A. Graham of Goderich, Ontario died on August 6th in his 63rd year, following a prolonged illness.

Dr. Graham was born at Brockville, Ontario in 1895. He received his early education at Brockville public and high schools, and took an active part in sports. He was both a track and rowing medalist at Brockville, and as a rugby player, he was on both the high school and city teams at the same time.

A veteran of World War I, he served overseas as a Lieutenant with the Canadian Forestry Division. On his return he attended the Royal College of Dental Surgeons from which he graduated in 1923. That same year he set up practice at Goderich.

Dr. Graham was past chairman of the Public School Board, a past president of the Lions Club, past master of Maitland Masonic Lodge and served two terms on the Goderich Town Council. He was particularly active in promoting children's sports through the Lions Club and took a keen interest in all local sports from bowling to hockey.

Surviving are his wife, Erma, one daughter, Mrs. P. H. Roe, one son John, and a sister, Bertha, as well as two grandchildren.

ANNOUNCEMENTS

CONVENTIONS OF THE CANADIAN DENTAL ASSOCIATION

1958	Montreal, Quebec	Oct. 26th - 29th
1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 4th - 7th
1961	Saskatoon, Saskatchewan	June 25th - 28th
1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Sep. 25 & 26, 1958	Official Opening of New Dental Building	Dalhousie University Halifax, N.S.	Dean J. D. McLean	Dental Building, Dalhousie University, Halifax, N.S.
Nov. 1, 1958	Annual Meeting—New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.
Nov. 18-23, 1958	Pan American Dental Congress	Mexico City	Dr. Roberto M. Ruff	Sinaloa No. 9, Mexico 7, D.F., Mexico.
Nov. 25-29, 1958	Convention of the Odontological Federation of Dental America—Panama	University of Costa Rica, San José, Costa Rica	Dr. R. Pauly, Secretary	Apartado Postal 698, San José, Costa Rica.
Dec. 8-12, 1958	Greater New York Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.
Feb. 23-27, 1959	15th Australian Dental Congress	Adelaide, South Australia	The Secretary	15 Grenfell St., Adelaide, South Australia.
Mar. 29-31, 1959	Fifth National Dental Congress and I Congreso Interamericano Dental De Cuba	Havana, Cuba	Dr. Claudio F. Cornell	Colegio Estomatológico Nacional, calle L No. 353, Vedado, Havana, Cuba.
May 10-13, 1959	Ontario Dental Association Convention	Royal York Hotel, Toronto, Ont.	Mrs. A. Durham, Secretary	234 St. George St., Toronto 5, Ont.
May 31- June 3, 1959	Western Canada Dental Society Convention	Banff Springs Hotel, Banff, Alberta	Dr. C. S. Lea, Secretary	708 Greyhound Bldg. Calgary, Alberta.

THE CANADIAN SOCIETY OF ORAL SURGEONS

The Canadian Society of Oral Surgeons will hold its annual meeting at the Queen Elizabeth Hotel, in Montreal, on Sunday, October 25th, 1958.

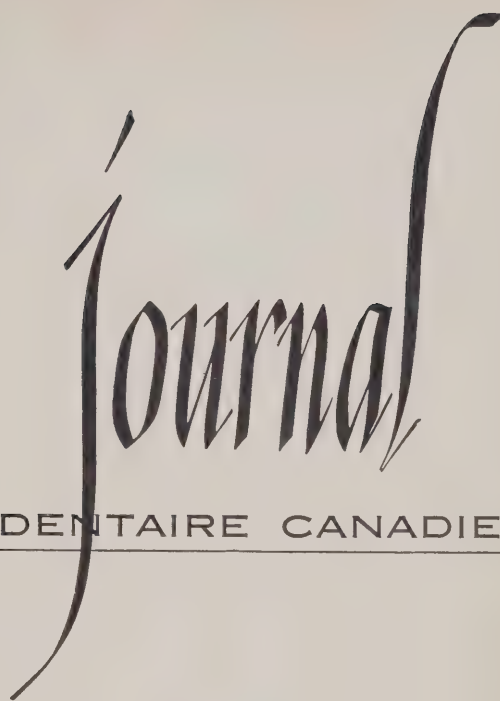
The scientific program is as follows:

9.00 a.m.	Address by the C.D.A. President, Dr. A. G. Racey
9.30 a.m.	Treatment of fracturesDr. P. Hickey, Philadelphia, Penn.
10.30 a.m.	To be announcedDr. H. Archer, Pittsburg, Penn.
12.30 p.m.	Luncheon
1.30 p.m.	Business meeting
2.30 p.m.	Round Table discussions, by members of the Society Haemostatic agents Control of edema Implantation Transplantations
4.30 p.m.	SummaryDr. H. Archer
6.00 p.m.	Social gathering

Members of the C.D.A. who are not active members of the Canadian Society of Oral Surgeons, are invited to attend this meeting. Fees for the day: \$10.00.

All those wishing to attend should notify:

**Dr. J. J. McCarthy, Secretary, Canadian Society of Oral Surgeons
1414 Drummond St., Montreal, P.Q.**



E L'ASSOCIATION DENTAIRE CANADIENNE

L'endodontie et son évolution

par I. L. FEINCHNEIDER, D.D.S., Montréal

L'endodontie est devenue dans notre ère contemporaine une discipline scientifique possédant ses principes biologiques, physiologiques, pathologiques et thérapeutiques. Elle a ses indications, ses techniques et ses limites qui en font une science précise et pratique. Seule lui manque encore la reconnaissance officielle et confiante d'un public souffrant, qui n'apprécie pas à leur pleine valeur les services qu'elle peut lui rendre. C'est que les malades dentaires n'ont pas encore conscience de la valeur de leurs dents naturelles et qu'ils jettent trop aisément leur dévolu sur des prothèses de tout acabit, croyant, bien à tort, régler à jamais leurs problèmes.

L'endodontie se propose en tout premier lieu de conserver en fonction normale des dents atteintes d'affections pulpaires et de lésions périapicales; elle réalise son but en

étudiant les causes de l'état pathologique de ces dents et en mettant en oeuvre une façon de les traiter.

Comme toute autre science thérapeutique, l'endodontie suppose un bon diagnostic clinique et radiologique; elle exige une évaluation judicieuse des indications et des contrindications au traitement; elle demande des renseignements précis sur l'histoire dentaire et médicale du patient; elle se base sur une diversité de moyens appropriés à chacun des cas; elle impose à l'opérateur des connaissances approfondies d'anatomie, de pathologie, de physiologie et de pharmacologie.

L'endodontie appartient à l'omnipraticien; le dentiste, s'il veut servir l'intérêt du public, doit tirer profit de cette science.

Point n'est besoin de discuter sur la préférence qu'il faut donner au traitement

conservateur comparé à l'élimination des dents atteintes d'affections pulpaires, surtout si ces dents ont une valeur esthétique ou fonctionnelle.

Cependant, il ne faut pas croire que l'endodontie est une panacée universelle et qu'elle prévient toutes les extractions. Ce genre de traitement a ses limites; des cas se présentent où le dentiste ne doit même pas songer à entreprendre des soins endodontiques.

D'autres circonstances le placeront devant un dilemme: extraction vs traitement radiculaire? L'examen clinique, la radiographie et l'histoire de cas trancheront la question. Il n'y a pas de règle fixe; chaque cas soulève ses problèmes; le dentiste prend sa décision, fort de son expérience et de ses connaissances.

Trop de facteurs entrent en cause pour qu'on puisse établir une équation simpliste. Des cas sont faciles, d'autres difficiles; l'opérateur a une vaste expérience dans ce domaine ou il est à faire ses premières armes. Il y a aussi le doigté, l'entraînement.

On peut diviser en deux groupes les cas faciles: 1) les dents qui ne présentent pas de difficulté; 2) les dents qui laissent prévoir certains obstacles. Dans le premier groupe, classons: a) les dents monoradiculaires, en général; b) les dents accessibles bien formées avec racines droites; c) les dents aux canaux bien ouverts.

Le deuxième groupe comprend: a) les multiradiculaires et les monoradiculaires avec canal accessoire; b) les dents en mauvaise position ou difficilement accessibles; c) les dents aux canaux étroits partiellement obstrués et aux racines recourbées; d) les dents aux canaux très larges, mais béants à l'apex; e) les dents aux couronnes très avariées et détruites par la carie. Ce deuxième groupe fait appel à la dextérité de l'opérateur; il exige des techniques spéciales qui souvent doivent être mises en oeuvre par un spécialiste.

Indications pour un traitement endodontique par voie coronaire

- 1) Hypérémie irréversible de la pulpe,

causée par un irritant chimique ou mécanique. Cette inflammation du tissu pulpaire suit le meulage excessif d'une dent, qui dégage une chaleur trop grande; une suroccclusion de dent solidement implantée dans l'os alvéolaire; une abrasion ou une érosion qui laisse la dentine sans protection; une carie profonde avec exposition de pulpe; une obturation en silicate insérée avec trop de pression ou sans substance isolante; une obturation métallique profonde, etc.

2) Pulpite ulcérate ou séreuse. Ces inflammations se manifestent par une douleur excessive, qui se produit généralement en position couchée, la nuit, sans provocation apparente (cas traumatique).

3) Nécrose ou gangrène pulpaire. A la suite d'une irritation microbienne et toxique, l'organisme réagit par le processus inflammatoire du système réticulo-endothélial, en formant une barrière de tissu conjonctif et d'éléments figurés du sang. Cet épaissement des cellules serait le siège d'une infection chronique pouvant évoluer en abcès, soit un abcès alvéolaire aigu, un abcès chronique, une fistule, un granulôme, un kyste.

La chirurgie apicale ne devrait s'appliquer qu'à un kyste, car le traitement conservateur ou par voie coronaire ne peut éliminer seul la membrane épithéliale qui l'entoure et le délimite. Cette membrane formée de reliefs aérolaires de Malassez sécrète un liquide typique; elle ne peut s'éliminer d'elle-même; elle augmente sans cesse de volume; elle exerce une pression sur les cellules périphériques; produit une lyse osseuse, qui peut prendre des proportions considérables (déformation des maxillaires, fractures, etc.).

Les kystes radiculaires récidivent invariablement après le traitement de canal, sans chirurgie apicale. Mais l'intervention chirurgicale seule ne complète pas le traitement: elle suppose aussi le traitement du canal.

Il est parfois difficile de différencier un kyste d'un granulôme. Leurs symptômes subjectifs sont les mêmes. La radiographie donne parfois une image identique pour

les deux lésions, surtout à leur début. Seule la densité radiologique varie parfois et il faut un oeil exercé pour distinguer une pathologie de l'autre. Toutefois, les kystes sont assez rares et l'expérience nous prouve que les granulômes sont beaucoup plus fréquents.

Des statistiques compilées sur 170 biopsies d'infections périapicales ont montré que 84.9% de ces cas étaient des granulômes; 6.4%, des kystes; 8.2%, des abcès simples. (Sommer, R. S.; Ostrander, S. D.; Crowley, M. C.: "Clinical Endodontics", W. B. Saunders Co., Philadelphia, 1956). L'ostéite et l'ostéomyélite sont extrêmement peu fréquentes.

En se basant sur ces chiffres, il est sage de toujours commencer par un traitement pulpaire simple et ensuite prendre des radiographies de contrôle, à périodes déterminées. Il sera toujours temps de pratiquer l'apectomie et le curettage de la membrane kystique, si la lésion ne se comble pas dans une période de temps raisonnable.

Le seul moyen sûr d'identifier un kyste est encore l'examen microscopique en biopsie. La présence d'un kyste véritable demeure la seule justification à un curettage apical. Et, comme nous le disions plus haut, cette chirurgie peut s'entreprendre après le traitement de canal, quand la régénération osseuse ne s'observe pas après un laps de temps raisonnable. Une intervention chirurgicale trop précoce peut mettre en danger la vitalité des dents adjacentes et créer des ennuis considérables. Et nous passons sous silence le choc traumatique et psychique causé au patient par ces manœuvres chirurgicales. Il vaut mieux attendre quelques mois, laisser agir les forces de régénération physiologiques. Il n'est pas nécessaire d'extraire les dents d'office à cause d'un doute radiologique. Les causes d'échec les plus fréquentes sont une technique défectueuse ou un traitement inadéquat. Une réobturation des canaux, une reprise de traitement pourront sauver des dents qu'un diagnostic fait à la légère aura condamnées.

Même certaines enflures, qui, cliniquement, présentent une sensation de crépitation à la pression du doigt ne sont pas nécessairement des kystes.

Le traitement endodontique est donc toujours indiqué, même pour les racines entourées d'un kyste, puisque les canaux doivent de toute nécessité être obturés avant la chirurgie.

Dents douteuse, mais susceptibles de subir l'endodontie

1) dents ayant une histoire d'abcès aigu;

2) dents à l'apex érodé (constatation radiologique);

3) dents dont les racines sont exposées jusqu'au tiers apical;

4) dents avec infection aiguë ou rarefaction osseuse ayant résisté à un traitement d'endodontie;

5) dents dont la couronne est détruite à un point tel qu'elles ne peuvent être isolées pour le traitement ou reconstituées après le traitement.

Les contrindications locales restent individuelles; le mécanisme de défense et le potentiel de cicatrisation des tissus du patient jouent un rôle important dans le succès de cette thérapie. De plus, les conditions locales ou constitutionnelles, qui peuvent gêner l'action des agents cicatrisants de ce traitement, sont moins fréquentes que nous pouvons l'imaginer; nos chances de succès sont généralement bonnes.

Toutefois, le pronostic des cas suivants est douteux:

1) dents entourées de kystes radiculaires;

2) dents qui contiennent des résidus nécrotiques non extirpables à cause de leur calcification, des débris scellés ou des instruments brisés dans des canaux tordus; dents dont une des racines est brisée;

3) dents ayant fistule périapicale s'ouvrant dans une crevasse gingivale.

D'autres cas, dont l'apparence clinique et radiologique sont assez mauvaises au point de vue pronostic, peuvent réagir favorablement à un traitement d'endodon-

tie. Parmi ceux-ci, citons les suivants:

1) Abscess alvéolo-dentaire aigu

Bien que ses symptômes soient assez alarmants, il faut compter sur la défense physiologique des tissus. L'expérience prouve que le drainage de pus et l'exudat des sérosités redonnent à la dent sa solidité originale. Les dents atteintes de ce genre d'infection répondent généralement d'une façon satisfaisante à un traitement de canal et leur pronostic est plus favorable que celui des dents à prolifération infectieuse chronique.

2) Apex érodés

Ces cas considérés comme défavorables à un traitement de canal, à cause de la lyse osseuse et à cause de la destruction des cellules de ciment qui se sont produites à leur apex, répondent assez bien à un traitement de canal, à condition de prendre les mesures qui s'imposent. On croyait qu'une racine dénudée de la membrane périodentaire devenait pénétrée de part en part par l'infection.

Des coupes histologiques de sections de mâchoire contenant des dents dépourvues de pulpe et souffrant d'infection chronique avec lyse osseuse périapicale montrent communément des résorptions radiculaires. Mais ces résorptions de ciment atteignent bien rarement la dentine entourant le canal radiculaire.

De plus, des racines dépourvues de pulpe et érodées à leur apex ont pu être traitées avec succès. Coolidge et Jessel ont montré des coupes histologiques de telles dents où apparaissent des zones de ciment nouveau qui s'est formé aux endroits précis où auparavant on pouvait remarquer des traces de résorption active. On peut raisonnablement croire que ces structures détériorées par l'infection se sont reconstituées à l'aide de ciment et de dentine secondaires, grâce à un traitement d'endodontie. (Coolidge, E. D.; Kessel, R. G.: "Endodontology", 2e édition, chapitre 16, Lea & Febiger, Philadelphia, 1956).

Le ciment et la dentine, comme l'os, peuvent se régénérer. L'évidence radiolo-

gique d'érosion apicale suppose une réaction inflammatoire vigoureuse et de longue haleine dans laquelle des éléments résorbants sont anormalement actifs (ostéoclastes). Les irritants chimiques ou traumatiques sont sans doute les facteurs déterminants et responsables d'une infection. Néanmoins, si un traitement de canal permet l'élimination des causes destructives, la régénération biologique des tissus mous et des tissus durs peut s'établir normalement. L'expérience clinique prouve avec contrôle radiologique que les dents entourées de régions radiculaires raréfiées peuvent se régénérer totalement à la suite d'un traitement conservateur.

On prétend en certains milieux qu'un traitement de canal est contraindiqué dans une dent dont plus du tiers de la racine est dépourvu de tissu osseux à son apex. Des résultats cliniques prouvent encore que cette théorie n'est pas justifiée. Les tissus périodentaires ne perdent pas leur pouvoir de régénération, surtout à l'apex de la dent. La régénération à l'apex peut se faire complètement dans les cas où la lyse osseuse s'étend de la région périapicale à l'extrémité de la crête alvéolaire.

Impossibilité d'isoler une dent avec la digue

La position d'une dent ou la destruction trop considérable de sa couronne empêchent parfois le dentiste d'isoler cette dent avec la digue. Dans plusieurs circonstances et en particulier pour les dents supérieures, les rouleaux de coton peuvent suffire à isoler une dent puisque même en certains cas où le test de culture reste positif, lorsque le canal est bien obturé, on peut noter une régénération des cellules à l'apex de la dent. Souvent des tissus périapicaux considérablement lacérés répondent favorablement à un traitement conservateur bien exécuté, même en présence de culture positive. Mais, il ne faudrait pas croire qu'il ne vaut pas mieux s'assurer des cultures négatives avant d'obturer des canaux. Le traitement classique exige cette précaution.

Influences constitutionnelles

Les patients qui souffrent d'une maladie constitutionnelle grave, en phase active, font de mauvais sujets pour les traitements de canaux. Les tissus de ces malades n'ont pas une résistance suffisante à l'infection et ont des pouvoirs régénérateurs affaiblis. L'état morbide de ces patients favorise la prolifération des bactéries saprophytes de la cavité buccale; ces microbes deviennent pathogènes; leur virulence s'accroît en raison de la diminution de la résistance du milieu. Dans ces cas, la chirurgie est vouée à un échec à cause de l'infection secondaire probable, quoiqu'au cours de la vie, aucun tissu ne perd complètement son potentiel de régénération.

Ces maladies qui constituent un obstacle aux traitements d'endodontie sont généralement: le diabète, la tuberculose, l'anémie pernicieuse, etc. D'autres maladies, comme les infections à haute température, offrent aussi des complications au point de vue traitement. Seuls les traitements d'urgence peuvent s'entreprendre, comme, par exemple, un drainage. Mais même si une de ces maladies est déjà sous contrôle médical, il n'y a aucune contraindication à poursuivre les soins. Les patients qui ont une histoire de cas en rapport avec la fièvre rhumatismale ou une maladie de coeur congénitale, peuvent subir un traitement chirurgical, à condition d'observer avec soin toutes les règles d'aseptie. Alors les nécroses pulpaire bénéficieraient d'une médication antibiotique pour prévenir un transit bactérien. Le potentiel de cicatrisation des tissus périapicaux de ces patients justifie le traitement de canal. Malgré un grand nombre d'observations sur les relations possibles entre le rhumatisme, l'arthrite et la neurite avec l'infection focale, on n'a pu encore fournir la preuve évidente de cette influence des foyers infectieux et il n'y a pas de raison valable pour ne pas tenter un traitement d'endodontie chez ces malades. L'infection disparaîtra avec la réussite du traitement.

Age du patient

On a souvent discuté de l'âge du patient en relation avec les traitements d'endodontie. Les personnes âgées répondent remarquablement bien à ces procédures à cause de la calcification secondaire des canaux et de l'étroitesse des foramens apicaux. Les enfants présentent des difficultés plus grandes. Les apex largement ouverts sont difficiles à obturer, mais, d'un autre côté, leur résistance à l'infection et leurs possibilités de régénération sont idéales.

Histoire dentaire du patient

Symptômes subjectifs: douleur aiguë, sourde, localisée, diffuse, intermittente, au froid, chaud, pression.

Symptômes objectifs: enflure, fistule, adénopathie, dent décolorée, branlante, pulpe exposée, par la carie, par un traumatisme, un instrument, une obturation.

Vitalomètre: de 1 à 10 volts; les antérieures réagissent plus rapidement que les postérieures. Tests thermiques: chaud ou froid.

Interprétation radiologique: granulôme, kyste, calcification du canal radiculaire, fracture radiculaire, obturation incomplète, faux canal, résorption apicale, raréfaction osseuse.

Histoire médicale du patient

Avant d'entreprendre un traitement endodontique, il faut avoir à l'esprit que les affections pulpaire ne sont pas différentes des autres pathologies de l'organisme humain. Chaque fois que les substances protéiques se nécrosent, tel que dans la dégénérescence pulpaire, il y a danger de septicémie, extrêmement toxique pour l'ensemble du corps. Des colonies de bactéries et de toxines se développent dans cette nécrose et ont tendance à envahir les tissus environnants. Le patient doit être instruit de ces phénomènes; il se soumettra de meilleure grâce aux procédures cliniques.

Le patient a-t-il souffert souvent de maux de gorge durant son enfance? A-t-il eu des fièvres rhumatismales? Des douleurs articulaires concomitantes? Ces

renseignements peuvent déceler des troubles cardiaques. Si se plaint de sa gorge, on peut songer à des complications secondaires à une infection des organes respiratoires ou à une infection spécifique de streptocoques. Le patient souffre-t-il de lésion cardiaque identifiée? Ces renseignements nous aideront à prévenir le transit bactérien dans l'organisme et une endocardite sub-aigüe possible (prémédication et antibiotiques). Les intestins sont-ils malades? Il ne faut pas oublier que certaines bactéries intestinales sont parfois retrouvées dans une dent infectée. Comment le patient a-t-il réagi à des interventions chirurgicales précédentes? Ces détails aident le dentiste dans son comportement opératoire (tolérance aux anesthésies générale et locale, hémorragies, idiosyncrasies, allergies, syncopes, réactions histaminiques (enflure, douleur). Le patient éprouve-t-il des douleurs musculaires ou osseuses? Le dentiste peut établir une relation entre

l'infection dentaire et ces douleurs rhumatismales ou arthritiques (théorie discutée). Conditions neuro-musculaires: celles-ci sont un indice de la résistance générale du patient. Par exemple, le bruxisme peut occasionner un épaississement de la membrane périodentaire, visible à la radiographie.

Le patient a-t-il des maux d'oreilles? Les rapports entre les infections dentaires et les manifestations cliniques de l'oreille ne sont pas encore clairement définis. Exemple: les "tophi", vésicules sur le lobe de l'oreille, sont des signes de goutte (forme dégénérée de l'arthrite). Le patient est-il sujet aux rhumes de cerveau? S'il souffre de plus de trois rhumes par année, on peut songer à une allergie, à de l'asthme. Cet état peut avoir une influence sur les médicaments à utiliser. De même, le dentiste doit être fixé sur une sensibilité possible du patient à certains genres d'antibiotiques.

La Société canadienne de Chirurgie buccale

La Société canadienne de Chirurgie buccale tiendra sa réunion annuelle à l'Hôtel Queen Elizabeth de Montréal, le 25 octobre 1958.

Le programme scientifique est le suivant:

9.00 hrs a.m.	Discours du Président de l'A.D.C.	Dr A. G. Racey
9.30 " "	Traitement des fractures des maxillaires	Dr P. Hickey, Philadelphie, Penn.
10.30 " "	(sujet à venir)	Dr H. Archer, Pittsburg, Penn.
12.30 " p.m.	Déjeuner	
1.30 " "	Réunion d'affaires	
2.30 " "	Discussion de groupe par les membres de la Société Agents hémostatiques Contrôle de l'enflure Implantations Transplantations	
4.30 " "	Conclusions	Dr H. Archer
6.00 " "	Cocktail	

Les membres de l'Association dentaire canadienne, qui ne sont pas des membres actifs de la Société canadienne de Chirurgie buccale, peuvent assister à cette réunion. Honoraires pour la journée: \$10.00.

Tous les dentistes qui sont intéressés à cette journée d'études sont priés de communiquer avec le docteur Gérard de Montigny, président de la Société, 400 est Bd St-Joseph, Montréal.

ÉDITORIAL

L'honneur de votre présence

Le Congrès de l'Association dentaire canadienne, qui aura lieu à Montréal du 25 au 29 octobre prochain, fera époque par ses innovations dans les annales de la dentisterie du Canada.

Ce Congrès laisse les sentiers battus et offre aux congressistes un atmosphère nouveau fait d'initiatives jamais tentées et d'originalité toute neuve.

C'est d'abord la première fois qu'un groupement de langue française de Montréal, en l'occurrence la Société dentaire de Montréal, organise les assises annuelles de notre Association nationale. Ces confrères francophones, animés par l'enthousiasme et l'exhubérance de leur tempérament latin—et aussi par l'absence de tradition et de coutume dans l'organisation d'un congrès de cette envergure—ont eu toutes les audaces!

Les réunions se dérouleront dans un cadre entièrement neuf: l'Hôtel Queen Elizabeth, l'hôtel le plus vaste et le plus moderne du pays, conçu dans l'esprit des architectes pour abriter des congrès du genre du nôtre.

Le comité directeur a invité à son programme scientifique un conférencier français, de Paris, qui viendra exposer à son auditoire les dernières données de la science dentaire française. C'est la première fois qu'un confrère de France s'adressera aux dentistes canadiens de toutes les provinces.

Toutes les conférences plénières seront traduites simultanément soit en anglais, soit en français. Ainsi les congressistes pourront entendre avec facilité les communications qui leur seront faites. Le service de traduction est assuré par des experts rompus à ce travail.

Le Comité du Programme a voulu exploiter la vogue dont jouissent actuellement les discussions de groupe (panel). Au lieu d'assister à une clinique offerte par le même personnage durant la période fixée, on pourra profiter d'un groupe de trois experts qui discuteront un même sujet, mais sous des angles différents.

Au cours du Congrès, les membres de l'Association auront l'occasion d'exprimer leurs opinions sur des problèmes qui assaillent aujourd'hui l'exercice dentaire. On tiendra une enquête-éclair auprès de l'assistance pour connaître sa réaction en face de certaines questions en litige (honoraires, assurance-santé, recrutement, etc.).

Les réunions sociales se tiendront dans une ambiance et un décor canadien-français. Les spectacles seront d'inspiration française et les aliments, de chez-nous. Les dentistes des autres provinces n'auront jamais rien vu de semblable!

On prétend en certains milieux qu'assister à un congrès et même qu'appartenir à une société dentaire représente une perte de temps et d'argent. On allègue que les conférenciers et que les cliniciens sont ennuyeux, qu'ils ne disent rien de neuf et qu'ils ne sont pas pratiques. On critique les programmes; on les accuse de manquer d'originalité et d'imagination. On murmure que les congrès sont toujours organisés par le même "petit groupe", qui n'a d'autre souci que de se mettre en vedette au détriment de l'avancement de leurs confrères. Ces commentaires et ces jugements ont parfois un semblant de vérité, mais cet état de choses, s'il existe parfois, nait précisément du désintéressement de certains confrères pour leur organisations.

La formation scientifique du dentiste ne se termine pas avec la fin de ses études. Pour qu'une profession améliore son rendement, il faut que ses membres continuent à s'instruire toute leur vie et la meilleure façon de se tenir à la page, c'est d'appartenir à des sociétés et d'assister aux congrès. Quelques confrères pensent qu'en se tenant au courant des publications scientifiques, ils peuvent se renseigner sur les nouvelles méthodes de diagnostic et de traitement. Mais, si le dentiste féru de littérature professionnelle n'assiste pas aux congrès, il se prive de conseils précieux et de détails importants dans les nouvelles techniques. D'ailleurs, certains cliniciens ne publient jamais. Si un dentiste croit que les programmes des sociétés ou des congrès ne sont pas tels qu'ils devraient être, c'est son devoir de le dire: les organisateurs seront heureux de recevoir des suggestions constructives.

Il faut aussi assister aux réunions où se discutent les problèmes de la profession et voir à ce que des hommes compétents soient élus aux postes de commande. Il est important que les dentistes s'intéressent d'une façon active aux affaires de leur profession. Tout homme a le droit et l'obligation de donner son avis et de voter selon sa conscience. A mesure qu'un dentiste s'immisce dans les activités de sa profession et qu'il fréquente davantage des confrères entreprenants, il sent naître en lui des sentiments sincères de camaraderie pour ces compagnons et de fierté à servir son groupe professionnel. Ce nouvel enthousiasme s'exerce jusque dans sa pratique privée et dans sa famille. Il réalise qu'à se mêler à des confrères dans des assemblées, des déjeuners, des dîners et même des coquetels, il connaît plus à fond la dentisterie: c'est pour lui toute une révélation!

Les dentistes de langue française des Etats-Unis et du Canada—surtout ceux de la Province de Québec—connaissent la valeur des congrès pour s'instruire, se récréer et rencontrer des confrères. C'est en grand nombre qu'ils s'inscrivent à celui d'octobre prochain.

"Faites-nous l'honneur de votre présence" est une formule de politesse employée dans les cercles mondains pour des réceptions officielles, anonymes, où seule compte la manifestation elle-même.

Cette phrase toute faite ne peut s'utiliser pour le Congrès national des dentistes, car cette réunion scientifique et sociale est l'affaire de tous les confrères canadiens. A ce congrès, les congressistes se sentiront chez eux; ils vivront quelques jours dans un climat de famille, de la grande famille dentaire du Canada.

Gérard de Montigny

L'Académie Nationale de Chirurgie Dentaire a l'honneur de porter à la connaissance de tous les confrères qu'elle attribuera, en 1959, un prix de Cent Mille Francs pour la meilleure étude, écrite directement en langue française et se rapportant à la science ou à l'enseignement odontologique, parue après le 1er juillet 1956.

Trois exemplaires devront être adressés au Secrétaire Général de l'**Académie Nationale de Chirurgie Dentaire**, M. Robert IBOS, 11, rue Ancelle, Neuilly s/Seine, avant le 1er Mars 1959.

Congrès de l'Association Dentaire Canadienne

à Montréal

les 26, 27, 28, 29 octobre 1958

à l'Hôtel Queen Elizabeth

Cliniques répétées

1) Dr James Douglas McLean, Halifax

- doyen de la faculté de chirurgie dentaire, Université Dalhousie
- professeur de dentisterie opératoire
- fellow du Collège International des Dentistes
- président du Comité d'Étiquette professionnelle, A.D.C.
- membre du Comité d'Enseignement dentaire, A.D.C.

Sujet: "Amalgam"



2) Dr Georges Pelletier, Montréal

- assistant-professeur en périodontie à l'Université de Montréal
- chargé des cours en périodontie à l'Université de Montréal
- diplômé en périodontie du N.Y.U. College of Dentistry
- membre de l'American Academy of Dental Medicine
- membre de l'American Institute of Dental Medicine

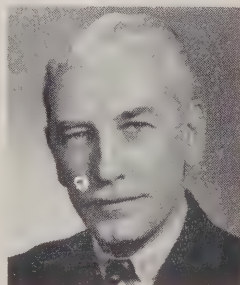
Sujet: "Traitement des maladies périodentaires en pratique dentaire"



3) Dr Wilfred James Johnston, Montréal

- assistant-professeur au service d'endodontie et de pharmacologie dentaire à l'Université McGill
- chef du service de chirurgie dentaire, au Montréal Childrens' Hospital
- chef du service de prothèse maxillo-faciale, au Queen Mary Veterans' Hospital
- clinicien au Montréal General Hospital
- dentiste au Queen Elizabeth Hospital

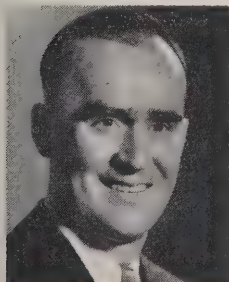
Sujet: "Le traitement des affections traumatiques et pathologiques en endodontie au moyen de la chirurgie"



4) Dr Vincent Tremblay, Montréal

- ancien assistant-professeur de dentisterie opératoire à l'Université de Montréal
- chargé de cours d'endodontie à l'Université de Montréal
- diplômé en endodontie de l'Université du Michigan, Ann Arbor
- ancien président de la Société dentaire de Montréal
- trésorier de l'Association dentaire de la Province de Québec

Sujet: "Considérations biomécaniques sur les problèmes les plus fréquents en endodontie"



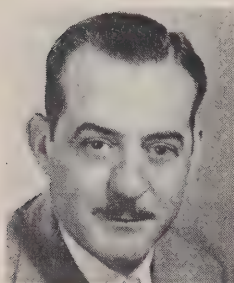
5) Dr H. H. Pearson, Montréal

- membre fondateur et ancien président de la Mount-Royal Dental Society
- co-fondateur et ancien président de la Société d'Endodontie de Montréal
- membre fondateur de la section de Montréal de l'American Academy of Dental Medicine
- co-fondateur du Montreal Alumni Chapter, Alpha Omega Fraternity
- récipiendaire d'honneurs décernés par diverses sociétés dentaires

Sujet: "Le blanchiment des dents"

N.B.—Les cliniques 3, 4, 5 seront présentées ensemble, dans la même salle, sous forme de discussion de groupe.





7) *Dr Claude W. Adams, Pennsylvania*

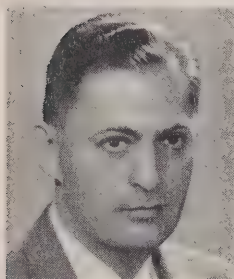
—directeur des recherches professionnelles à la Dentists' Supply Company
—directeur de cours post-universitaires en prothèse au Canada et aux États-Unis
—directeur technique de la Dentists' Supply Company

Sujet: "Facteurs importants affectant l'esthétique en prothèse dentaire totale"

6) *Dr Pierre Cernéa, Paris, France*

—professeur agrégé à la Faculté de Médecine de Paris
—chargé de cours de Stomatologie à la Faculté de Médecine de Paris
—co-directeur de l'Encyclopédie médico-chirurgicale, vol.: Stomatologie
—directeur des Actualités Odonto-Stomatologiques
—stomatologiste des Hôpitaux (Paris)
—membre des jurys des examens pour l'obtention du diplôme de chirurgien-dentiste

Sujet: "Quelle attitude adopter en présence d'une leucoplasie ou d'un lichen plan?"



8) *Dr H. R. Skurnik, Montréal*

—membre de la Mount-Royal Dental Society, Alpha Omega Fraternity, Société d'Endodontie de Montréal, et de l'American Society of Dental Medicine
—clinicien invité à Montréal, Trois-Rivières, Québec, Shawinigan

Sujet: "Plan de traitement en vue du rétablissement de l'occlusion—couronnes et ponts"

Cliniques de table

- 1—Dr Mervyn A. Rogers, Service dentaire du Montreal General Hospital
"Anesthésie locale"
- 2—Dr R. T. Lamb, Faculté de chirurgie dentaire de l'Université McGill
"Confection d'incrustations M.O.D.—Rétention et protection"
- 3—Drs Yves Dufresne et Jean Bruneau, Trois-Rivières
"Etude de cas, avant et après les restaurations: prothèses complètes et partielles; couronnes et ponts"
- 4—Drs George Silver et Morton Greenblatt, Montréal
"Esthétique dans la confection des prothèses"
- 5—Dr Georges Normand, M.D., Trois-Rivières
"La coopération de la profession dentaire dans le dépistage du cancer de la cavité buccale"
- 6—Dr M. Levitt, Montréal
"Confection des pivots d'or dans les canaux et tirage direct"
- 7—Dr Harry Rosen, Montréal
"Reconstitution de dents considérablement avariées pour servir à des ponts ou à des prothèses partielles"

- 8—Dr David Salomon, Montréal
"L'emploi des matériaux à base de caoutchouc ou de silicone pour la prise d'empreinte des couronnes et des ponts"
- 9—Dr V. Bruce Morrow, Hamilton, Ontario
"Appareillage pour l'arc facial"
- 10—Dr Herbert Caplan, Montréal
"Réhabilitation dentaire à l'aide d'appareils et d'attachements de précision"
- 11—Dr Keith W. Davey, Toronto
"Appareils intralvéolaires pour maintenir les espaces dentaires"
- 12—Dr Robert Rapp, Toronto
"Technique de pulpotomie et de diagnostic pour les molaires primaires vivantes"
- 13—Dr R. L. Scott, Brantford, Ontario
"Traitement des cas d'occlusion croisée des dents antérieures et postérieures chez les enfants d'âge pré-scolaire"
- 14—Dr Howard Boyles, Montréal
"Couronnes et ponts"
- 15—Dr R. H. Bingham, Faculté de chirurgie dentaire, Université Dalhousie, Halifax
"Traitement à fond des autres 50%"
- 16—Dr Mervyn Gornitsky, Montréal
"Techniques des lambeaux muqueux en chirurgie buccale"
- 17—Dr Roland Baribeau, Trois-Rivières
"Périodontie et réhabilitation pour le praticien général"
- 18—Dr William B. Donohue, Montréal
"Les infections des espaces anatomiques d'origine dentaire"
- 19—Dr D. C. Eaton, Halifax
"Considérations sur le traitement des enfants"
- 20—Dr A. R. Ramsay, Maj., Lachine
"Prothèses partielles amovibles avec extensions pour éliminer la tension"
- 21—Dr Ernest Ambrose, Montréal
"Utilisation de matrices commodées pour diverses substances obturatrices"
- 22—Drs W. J. Johnston, C. C. Bourne et H. Olivier, Montréal
"Le dentiste et son rôle dans les cas de fissures palatines"
- 23—Dr J. E. Merritt, Halifax
"Couronnes complètes"
- 24—Dr T. J. Cooke, Winnipeg, Manitoba
"Couronnes et ponts"
- 25—Dr André Charest, Québec
"Traumatisme maxillo-facial"
- 26—Dr H. W. Hart, Winnipeg, Université de Manitoba
"Enregistrement automatique des relations inter-maxillaires"
- 27—Dr Isadore Bloom Hyams, Montréal
"Accollement pratique des crochets sur les dents de jeunes sujets"

Pour inscription et réservation de chambres, on s'adresse au Congrès national 1958 de l'A.D.C., 758 ouest rue Sherbrooke, Montréal 2. Prix de l'inscription et de toutes les activités sociales: \$35.00. Les dames: \$10.00.

Nouvelles de l'Association

Enregistrement pour le Congrès de 1958

Tous les membres de l'Association dentaire canadienne sont priés de faire parvenir au Secrétariat du Congrès (728 ouest, Sherbrooke, Montréal) leur formule d'enregistrement et de réservation de chambres. Tout indique qu'un nombre sans précédent de dentistes assisteront au Congrès de Montréal. On répondra aux demandes pour des chambres par ordre de priorité d'arrivée.

L'organisation du Congrès a fait parvenir à tous les dentistes canadiens un programme préliminaire. Tout indique que le programme — tant scientifique que récréatif — est bien au point. Le Journal publie tous les mois des détails au sujet de ce Congrès national.

Nouveaux membres au Bureau des Gouverneurs

Les docteurs J. M. Chamard de Montréal et R. M. Leblanc de Sherbrooke ont été élus représentants de la Province de Québec au Bureau des Gouverneurs. La province de Québec compte maintenant 1,355 dentistes; elle a donc droit à trois représentants. Le docteur R. Langlois de Québec demeure l'autre délégué.

Le docteur L. M. Grose de Toronto a été nommé délégué de l'Ontario en remplacement du docteur C. L. Strachan, qui a été forcé de démissionner pour des raisons personnelles. Le docteur Grose est un ancien président de l'Association dentaire d'Ontario et de l'Académie de Dentisterie de Toronto.

La Croix-Rouge remercie les dentistes

Le docteur Racey, président de l'Association dentaire canadienne, a reçu la lettre suivante du Comité Exécutif National de la Société de la Croix-Rouge canadienne:

"Le Conseil central de la Société de la Croix-Rouge canadienne désire transmettre l'expression de sa profonde reconnaissance aux médecins, aux infirmières, aux dentistes, aux instituteurs et à tous les autres membres d'organisations professionnelles pour le temps et le travail qu'ils ont consacré aux multiples activités de la Croix-Rouge.

Nous de la Société de la Croix-Rouge canadienne sommes reconnaissants envers les dentistes qui ont accordé leur appui . . ."

Congrès dentaire australien

Le quinzième congrès dentaire australien se tiendra à Adelaide, Australie du Sud, du 23 au 27 février 1959.

Les membres de l'Association dentaire canadienne peuvent prendre part à ce congrès.

Il suffit d'écrire au Secrétaire du Quinzième Congrès dentaire, 51 Grenfell Street, Adelaide, Australie du Sud, ou au Secrétariat de l'A.D.C.

Le système d'assurance-accident des écoles publiques de Winnipeg

On vient de rendre publics les honoraires payés par le plan d'assurance-accident des élèves des écoles publiques de Winnipeg pour des traitements dentaires. Ce système d'assurances rembourse les honoraires payés pour le traitement des dents naturelles qui étaient saines, mais qui ont été avariées au cours d'un accident, à condition que le dit traitement soit terminé 120 jours après l'accident et commencé en dedans de trente jours après l'accident.

Les blessures sont indemnisées selon la liste d'honoraires publiée plus bas; cependant la somme maximum pour des blessures aux dents subies dans une même journée ne doit pas dépasser \$50.00, s'il n'est pas question de ponts, et \$100.00, si des ponts doivent être confectionnés.

Dent ébrannée	\$ 5.00
Dent brisée qui ne nécessite pas de restauration	\$ 5.00
Extrirpation de nerf et traitement de canal	\$15.00
Restauration de dents brisées, par dent	\$15.00
Pont, pour chaque dent remplacée	\$30.00
Radiographie dentaire, une pellicule	\$ 2.00
les autres pellicules	\$ 1.50

Congrès dentaire pan-américain

Organisé par l'Association dentaire mexicaine, le congrès dentaire pan-américain aura lieu dans la ville de Mexico du 18 au 23 novembre.

Les dentistes canadiens qui désirent avoir des renseignements au sujet de ce congrès doivent s'adresser au Dr Roberto E. Woodworth, à l'Association dentaire mexicaine, Sinaloa No 9, Mexico 7, D.F., Mexique. Au sujet des chambres d'hôtel et du transport, on s'adresse à M. Joe D. Howard, Medical Arts Bldg., 1715 Pacific Ave, Dallas 1, Texas, Etats-Unis.

Plan d'assurance-pension de l'A.D.C.

Le bilan trimestriel établissant la valeur des unités des trois formules du plan est paru dans la livraison de juillet du Journal. On se propose de publier régulièrement des bilans semblables à mesure que le fiduciaire du plan, le Royal Trust Company, fournira des renseignements à son sujet.

Au début, la valeur des unités a été fixée à \$10.00. Au 31 mai 1958, la nouvelle valeur des unités se chiffrait comme suit:

Fonds des obligations du gouvernement	\$10.198
Fonds des obligations de compagnies	\$10.160
Fonds des parts communes	\$10.712

On établit la valeur des unités en divisant le montant net de chaque fonds par le nombre d'unités qu'il contient. L'augmentation de la valeur des unités provient des dividendes et des intérêts accumulés en plus de la valeur intrinsèque des placement. Les argents s'accumulant dans le plan durant le trimestre se terminant le 31 août prochain serviront à acheter de nouvelles unités des valeurs apparaissant ci-haut.

Déclaration du Comité des Recherches de l'A.D.C. au sujet du rapport qui existerait entre la consommation du lait et la carie dentaire

Pour répondre à une demande du Secrétaire de l'Association dentaire canadienne, le Comité a fait une revue des travaux traitant des effets de la consommation du lait sur la carie dentaire (ouvrages consultés à la fin).

Ces recherches n'indiquent nullement que la consommation du lait augmente la susceptibilité à la carie dentaire. Un résumé (1) publié récemment et qui déclarait que la consommation du lait suit de près une augmentation de la carie dentaire constitue une version erronée de l'article original, dans lequel l'auteur émettait une hypothèse pour expliquer une soi-disant relation entre les énoncés.

Plusieurs rapports (5, 6, 7) indiquent qu'en augmentant la consommation de lait (probablement aussi en modifiant d'autre part l'alimentation), on diminue l'incidence de la carie. On rapporte (3) que la diète d'enfants ne souffrant pas de carie dentaire comportait de 3 à 6 verres de lait par jour.

BIBLIOGRAPHIE

1. Dental Abstracts, "Milk consumption and dental caries" 2(2):121, 1957.
2. Dubois-Prévost, R., "Lait et carie dentaire" Rev. Franc. d'Odonto-Stomatol. 6:693, 1956.
3. Grainger, R. M. Report read at the O.P.H.A. Convention, Toronto, 1955.
4. Mack, P. B. and C. Urbach, "A study of institutional children with particular reference to the caloric values as well as other factors of the dietary." Society for Research in Child Development, XIII, Serial No. 46, No. 1, 1948.
5. Mellanby M. and H. Coumoulos, "The improved dentition of 5 year-old London school children." Brit. Med. Jour. 1:837, 1944.
6. Shaw, Jas. H. "Nutrition and dental caries." Survey of the Literature on Dental Caries. Publication No. 225, National Academy of Sciences, National Research Council, Washington, D.C., 1952.
7. Sprawson E., "Preliminary Investigation of the Influence of Raw Milk on Teeth and Lymphoid Tissues." Proc. Roy. Soc. Med. 25:649, March 1932.

La population des Etats-Unis augmente plus rapidement que le nombre de ses dentistes

Selon l'Association dentaire américaine, la proportion des dentistes par rapport à la population est descendue à 1/679, alors qu'elle était de 1/671 et cela malgré une

augmentation de 1,307 dentistes en une seule année.

Au milieu de 1957, les Etats-Unis avaient 100,534 dentistes, c'est-à-dire 1,307 de plus que l'année précédente. 81,000 de ces dentistes sont en pratique privée. Ces chiffres indiquent donc que la population de ce pays augmente à un rythme plus rapide que le nombre de ses dentistes.

Découpures de journaux

Premier contrat de travail pour les techniciens en laboratoire:

Un contrat de travail, touchant 140 techniciens dentaires, a été signé en avril dernier, à Toronto, entre l'Union internationale des Bijoutiers et l'Association des laboratoires dentaires de l'Ontario.

Le représentant de l'Union internationale des Bijoutiers, M. L. H. Rosen, a déclaré que c'était le premier contrat de travail pour les employés de sept des plus importants laboratoires dentaires de Toronto, parmi lesquels se trouvent les laboratoires Shaw Ltée.

Le contrat accorde aux employés le choix de leur union, une semaine de cinq jours, quarante heures de travail, des plans de santé et de bien-être incluant une indemnité et une augmentation hebdomadaire de \$5.00 chaque année.

L'union espère encore offrir à ses membres et à leurs familles des soins médicaux et chirurgicaux gratuits, ainsi que les bénéfices de l'assurance-groupe.

Ont signé respectivement: pour l'Union des techniciens dentaires—Local 43, M. Rosen et pour les employeurs, M. F. J. Bryan, directeur de l'Association des Laboratoires dentaires de l'Ontario.

Globe and Mail, 4 avril 1958

"Londres — (AP) — La Chambre des Communes a voté des crédits supplémentaires de l'ordre de 24,000 livres par année pour éviter un déficit au plan d'Assurance-Santé."

Le Collège d'Ontario achète un édifice

Le 30 avril dernier, le Collège Royal des Chirugiens-Dentistes de l'Ontario a acheté une propriété située à la porte voisine du Secrétariat de l'A.D.C.

On croit que les réparations qu'on est à lui faire subir seront terminées au début de l'automne. L'édifice, qui a trois étages, est une ancienne résidence. En comptant les modifications en cours, cet achat représente une immobilisation d'une centaine de mille dollars.

**Une ville d'Alberta—la première—
adapte la fluoruration**

Fairview est la première ville d'Alberta à adopter la fluoruration de son eau. L'ingénieur sanitaire de la province a donné son approbation finale après avoir visité l'installation dont elle dispose. D'autres villes de la province se sont prononcées en faveur de la fluoruration par plébiscite et se proposent de procéder incessamment à son installation.

Acquisitions récentes de la bibliothèque

AMERICAN COLLEGE OF DENTISTS: Suggestions for a program of continuing educational efforts and professional advancement. Discussion presented before the A.C.D. at Miami Beach, Florida, November 3, 1957. St. Louis, Mo., 1957. 167 p. Mimeo.

AMERICAN COLLEGE OF RADIOLOGY: A practical manual on the medical and dental use of x-rays with control of radiation hazards. Chicago, 1958. 31p. \$0.25. (Sponsored by American Dental Association.)

ARCHER, W. H.: A manual of dental anesthesia. 2nd ed. Philadelphia, Saunders, 1958. 346p. illus. \$8.50.

BERRY, M.F., and EISENSON, J.: Speech disorders: principles and practices of therapy. New York, Appleton-Century-Crofts, Inc., 1956. 573p. illus. \$6.75.

BRINKOUS, K. M. Ed.: Hemophilia and hemophiloid diseases; international symposium. Chapel Hill, The University of North Carolina Press. 1957. 265p. illus. \$10.00.

COMMITTEE TO PROTECT OUR CHILDREN'S TEETH, Inc.: Gains and setbacks: community experiences on efforts for acceptance of water fluoridation. New York, 1957. Collection of 29 reports.

CULLEN, S.C.: Anesthesia: a manual for students and physicians. Chicago, Year Book Pubs., 5th ed. 1957. 295p. illus. \$5.50.

DENTON, G.B.: The vocabulary of dentistry and oral science; a manual for the study of dental nomenclature. Chicago, American Dental Association, 1958. 207p. \$4.00.

DENVER RESEARCH INSTITUTE, UNIVERSITY OF DENVER: Proceedings of the sixth annual conference on industrial applications of X-ray analysis. Denver, Colorado, August 7-9, 1957. William M. Mueller, Editor, 494p. Mimeo. illus.

DRIPPS, R. D.; ECKENHOFF, J. E. & VANDAM, L. D.: Introduction to anesthesia; the principles of safe practice. Philadelphia, Saunders, 1957. 266p. illus. \$4.75.

EUROPEAN ORTHODONTIC SOCIETY: Report of the thirty-second congress held at the Grand Hotel, Stockholm, Sweden, August 9th-13th, 1956. The Hague, 1956. 355p. illus. \$13.50.

GENERAL DENTAL COUNCIL, LONDON, Eng.: Regulation of dental practice, a survey of the legal and educational requirements for the practice of dentistry and dental surgery in different parts of the world. 1957. 144p. 10s.

HAM, A. W.: Histology. 3rd ed. Lippincott, Montreal, 1957. 894p. illus. \$11.00.

MARTIN, H.: Surgery of head and neck tumors. New York, Hoeber-Harper, 1957. 430p. illus. \$18.50.

MOORREES, C. F. A.: The Aleut dentition: a correlative study of dental characteristics in an Eskimoid people. Cambridge, Mass., Harvard University Press. 1957. 196p. illus. \$5.95.

NEW ZEALAND, COMMISSION OF INQUIRY ON THE FLUORIDATION OF PUBLIC WATER SUPPLIES: Report. Wellington, Govt. Print., 1957. 240p.

OTSBY, B.N.: A manual in endodontics. Oslo, Norwegian Institute of Dental Research, (n.d.) 56 p. Mimeo.

POLLACK, R. S.: Tumor surgery of the head and neck. Philadelphia, Lea & Febiger, 1957. 101p. illus. \$5.00.

ROBINSON, J. T.: The dentition of the Australopithecine. Memoir No. 9 published by the Transvaal Museum, Pretoria. 1956. 179p. illus. 2 3s.

RYAN, R. E.: Headache; diagnosis and treatment. 2nd ed. St. Louis, Mosby, 1957. 421p. illus. \$6.75.

SCOTT, J. H. and SYMONS, N.B.B.: Introduction to dental anatomy. 2nd ed. Edinburgh, Livingstone, 1958. 344p. illus. \$7.15.

SHILLINGTON, Col. G. B.: Handbook of the fundamentals of partial denture planning. Ottawa, Queen's Printer, 1957. 70p. illus. \$1.00.

STANFORD, G. H.: The conduct of meetings. Toronto, Oxford University Press. 1958. 88p. \$2.50.

THE YEAR BOOK OF DENTISTRY 1957-58: Chicago, Year Book Publishers, 1958. 480p. illus. \$6.50.

THE YEAR BOOK OF EAR, NOSE & THROAT and MAXILLOFACIAL SURGERY 1957-58: Chicago, Year Book Publishers, 1958. 383p. illus. \$7.50.

THOMA, K. H.: Oral Surgery, 3rd ed. St. Louis, Mosby, 1958. 1607p. illus. \$27.50.

Revue des Revues

Anesthésie

Neville Parker. — **L'hypnotisme en art dentaire.**

Trente pour cent seulement des sujets peuvent être hypnotisés si l'on en croit Hull, Bromwell, Moss et Wookey. Le sexe, la race, la situation sociale et l'état général n'ont aucun rapport avec la prédisposition à l'hypnotisme. Les enfants ne peuvent être hypnotisés avant cinq ans, et seulement avec difficulté jusqu'à dix ans.

Hull a montré un léger rapport positif entre l'intelligence et la prédisposition, mais cela n'a été confirmé par aucun des autres auteurs.

Les facteurs personnels mesurés par des tests psychologiques n'ont pas montré de rapports directs, un état hypnotique peut devenir rapidement un état somnambulique. Le psychiatre demande en moyenne 20 minutes pour mettre le sujet en transes à la première séance, et ensuite trois séances pour s'assurer d'un degré d'anesthésie profond. Le Chirurgien-Dentiste, quoi qu'il ait une réputation d'hypnotiseur, a toujours une grande difficulté pour hypnotiser, car sa fonction est peu favorable pour provoquer l'état sensible nécessaire à toute suggestion hypnotique.

Si le Chirurgien-Dentiste pratique la technique passive recommandée par les plus récents auteurs, le facteur temps est prohibitif.

Dans l'état présent de nos possibilités et connaissances, l'hypnotisme est impraticable en art dentaire.

Hypnosis in dentistry, (Australian Dent. Jour., n° 4/4/1958, pp. 86-88).

William-W. Friedman. — **Une méthode d'hypnotisme.**

Il y a beaucoup de techniques en Art dentaire, et la connaissance de chacune d'elles peut nécessiter plusieurs années de pratique et d'expérience, et beaucoup de dextérité. Pour l'hypnotisme, le succès dépend du savoir-faire du Practicien.

Les patients peuvent être classés selon leur tempérament et leur propre susceptibilité à notre influence. L'auteur nous informe qu'il utilise surtout et depuis dix ans, avec succès, la fixité du regard.

À la première visite, l'opérateur expose au patient le rôle et les effets de l'hypnotisme, thérapeutique anesthésique et sédatrice, et lui affirme que l'influence qu'il aura sur lui s'arrêtera à la pratique dentaire.

Il dispose le patient confortablement dans le fauteuil, lui fait fermer les yeux, lui presse les paumes de la main. S'il a jugé le patient inquiet, il lui a fait prendre un léger barbiturique une demi-heure à l'avance. Il lui expose alors ce qu'il devra faire lors de la deuxième visite.

À la seconde visite, le patient placé dans le même fauteuil, entouré du plus grand silence, doit regarder fixement un objet placé sur la tablette. On lui demande de se laisser aller, face, cou, jambes, cuisses, tout le corps doit être relâché. On peut accélérer l'état hypnotique par la pression des globes oculaires.

La respiration se module de façon monotone, plus bruyante; le patient s'endort. Quand nous jugeons que le sommeil est assez profond, nous pouvons intervenir puis, avant de le réveiller, lui suggérer ce que nous désirons de lui pour la troisième visite.

The personal approach in hypnosis (Dent. Survey, n° 5/58, p. 632-633, 1 fig.).

Dentisterie Opératoire

Joan E. Hills et H. - R. Sullivan. — **Etude de la décalcification de l'émail dentaire humain.**

Mise au point sur ce problème qui depuis Miller en 1890 avec sa théorie sur la décalcification par l'acidité buccale, et Gottlieb, Frisbie, Nuckolls et Saunders en 1944 avec leur théorie des ferments protéolytiques, a suscité bien des controverses, et l'excellent compromis de synthèse de Slack qui a montré que la décalcification commencée sous l'effet de l'acidification se continuait ensuite par protéolyse.

Les auteurs ont donc étudié la solubilité de la poudre d'émail dentaire humain dans des séries de citrates et de lactates de pH variable contenant des quantités diverses de phosphate de calcium. L'effet du bioxyde de carbone (gaz carbonique) dans les solutions fut également expérimenté.

De ces investigations on peut conclure que l'émail se dissout dans les proportions où son état est plus ou moins stable, et que la valeur du pH de la solution dépend de la concentration en carbonate et phosphate de calcium des tissus avoisinant l'émail.

La présence de gaz carbonique dans la solution dissolvante n'a jamais eu d'effet sur son efficacité.

Dix graphiques, et quatre tables de résultats comparés montrent avec quel sérieux et quelle puissance de moyens les auteurs ont pu réaliser leurs expériences.

Studies on the acid decalcification of human dental enamel. (Australian Dent. Jour., N° 1/2/1958, pp. 6-18, 10 fig.).

Jaime-L. Altmann. — Contribution à l'étude de la rétention des cavités pour obturations en matériaux plastiques.

Contrairement à Black qui préconisait des parois à angles droits, et des rétentions angulaires aiguës réalisées avec des fraises à cône renversé, l'auteur pense que des rétentions de section curviligne diminuent la tension des obturations.

Il les réalise donc à la fraise boule, s'appuyant sur l'autorité de praticiens internationalement connus comme Woodburg, Johnson, Ward, Schwartz.

Ayant étudié et analysé géométriquement, physiquement, radiographiquement et his histologiquement les obturations réalisées, il a constaté que les rétentions curvilignes diminuaient la tension en supprimant les angles vifs. La résistance des dents est améliorée. La surface de friction est augmentée. La méthode est simplifiée ainsi que l'instrumentation.

Pour l'auteur, qui s'appuie sur une bibliographie sérieuse et des expériences personnelles probantes, il n'y a pas de doute que les cavités des classes I, II, III et V de Black, ont intérêt à être réalisées de cette façon à condition qu'elles le soient entièrement dans la dentine.

Contribución al estudio de la retención en cavidades para obturaciones con materiales plasticos. (*Anales Facultad Odontología Montevideo*, N° 5/1^{er} Sem. 57, pp. 5-19, 10 fig.).

Fluor

J. Lindemann. — Quel est le contenu du thé en fluor?

Des recherches faites sur 12 qualités différentes se trouvant sur le marché au Danemark ont montré qu'à l'état sec le thé contient du fluor dans des proportions variant entre 5,1 et 13,3 %.

Une infusion de thé à 1 %, avec de l'eau distillée, réalise l'extraction de 78 à 100 % du fluor. Avec de l'eau de robinet contenant déjà du fluor, la quantité de fluor extrait des feuilles de thé, n'est pas diminuée.

Une tasse de thé à 14 % de fluor, donne 0,31 mg. de fluor; avec de l'eau à 0,80 ppm., 0,24 mg.; avec de l'eau à 0,45 ppm., et 0,19 avec de l'eau distillée.

Fluor i the. (*Tandlaegebladet, Copenhagen*, n° 4/4/1958, pp.247-251).

Pédodontie

L.-G. Morey. — Dépulpation des molaires temporaires.

Ceux qui s'intéressent à la prophylaxie dentaire connaissent l'importance de la première denture et cherchent à conserver les dents de lait cariées jusqu'au moment de leur chute normale.

On a utilisé l'oxyde de zinc (eugénate) et l'hydroxyde de calcium pour traiter les pulpes exposées; mais, quelques mois plus tard, on a eu le regret de constater quelques abcès, conduisant à l'extraction, ou à la chute prématurée des dents, dont les racines résorbées ne tenaient plus dans un os infecté.

De même, avec les moyens que l'on utilise généralement sur les dents accidentellement fracturées dont on conserve la pulpe radiculaire vivante après amputation vitale et pulpotomie camérale, il ne semble pas que le succès soit souvent assuré.

Par contre, la dépulpation avec momification des tissus canaliculaires et stérilisation formolée semble donner les meilleurs résultats à condition toutefois que l'exposition de la pulpe ne soit pas trop ancienne. Il faut la collaboration des parents pour éviter l'abus des sucreries, pour surveiller la denture de leurs enfants, et leur autorité pour les conduire au cabinet dentaire. Ainsi les dents de lait restent sur l'arcade jusqu'à la date de leur chute normale, maintenant l'espace nécessaire à l'évolution de la deuxième denture. Si nous pouvons éviter cette chute ou l'extraction, il faut réaliser prothétiquement ce maintien de l'espace normal.

L'auteur donne de sa technique opératoire un exposé méthodique et complet dont il est intéressant de retenir les points suivants:

- anesthésie légère intra-osseuse;
- protection contre la salive avec des rouleaux de coton et la pompe à salive;
- curetage de la dentine ramollie à excavateur;
- ouverture large de la chambre pulpaire à la fraise à fissure n° 3, stérile;
- nettoyage à l'excavateur stérile, tamponnement à l'hydrochloride adrénalinisé;
- revêtement basal d'une couche de pâte momifiante;
- stérilisation de la chambre pulpaire au phénol;
- obturation à l'eugénate recouvert d'amalgame.

Malgré de nombreux succès cette méthode offre quelques risques:

— si la pulpe a perdu de sa vitalité, on constate une nécrose suivie de résorption radiculaire;

— si l'accès aux canaux n'a pas été soigneusement réalisé, la pâte n'est pas dans une position correcte:

- si l'hémorragie n'a pas été bien arrêtée, il y a infection postopératoire;
- les dents sont souvent délabrées et se fracturent si elles ne sont pas couronnées.

Devitalising pulpotomy of the primary molar. (*Brit. Dent. Jour.*, n° 10/5/58, pp. 359-363, 9 fig.).

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Journal

OF THE CANADIAN DENTAL ASSOCIATION

Dentistry for the Pre-School Child

A Symposium

On Saturday, May 10th, 1958, at the Eighth Annual Meeting of the Canadian Society of Dentistry for Children held in Niagara Falls, Ontario, the following symposium, stenographically reported, was presented as a part of the program.

The participants were Dr. Robert M. Grainger, in charge of dental statistics in the Division of Medical Statistics of the Ontario Department of Health; Dr. Frank H. Compton, Director of Dental Services, Department of Public Health of the City of Toronto, and Dr. Edward R. Bilkey, a past-president of the Society and one who limits his practice to dentistry for children. The editor of this journal was the moderator of the panel. Editor.

Moderator: As this group well knows, all disease constitutes a public health problem and the significance of any particular disease may be judged in relationship to four things: incidence, severity, communicability, and cost. And I think dental disease incorporates at least three of

these characteristics. In Canada, last year, our people spent over 80 millions of dollars for what, I think, is a grossly inadequate dental treatment service. We do not have sufficient personnel to care, adequately, for the needs of our people. The net increase in dentists last year in

the Province of Ontario was six. At the same time our population increased at a rate somewhat in excess of 144,000, far outstripping the dental manpower increase.

We, in dentistry, espouse the cause of prevention but perhaps we deal with it in a manner of too little and too late! Why do so many of us consider prevention from, perhaps, only the kindergarten age and upwards? Perhaps we should direct more attention to even a younger age group. We certainly know that over 50 per cent of the malocclusions we find develop as a result of a failure to maintain the integrity of the deciduous dentition. It would seem therefore, that we should be more greatly concerned in attending to children earlier.

Each panel member in turn, was then asked to reply to the following question:

Moderator: What do you consider the most salient feature or pertinent observation in respect to the whole dental health status of the pre-school child, and what do you think is the most important single measure that will help to alleviate the dental disease problem?

Dr. Grainger: I think it is a definite lack of information on the part of the public and the answer, obviously, is education and instruction.

Dr. Compton: I am impressed by the widespread specific lack of appreciation of the importance of the deciduous dentition and I am personally convinced of the beneficial effects of water fluoridation.

Dr. Bilkey: I would think public apathy was the one factor which contributes most to the dental disease problem and I too, believe that fluoridation of communal water supplies is the most important single measure that will help to alleviate the problem.

Moderator: Is there really an existing need for dental care for the pre-school child, or is it rare to find children this young with actual treatment needs?

Dr. Grainger: There certainly is a very great need. In terms of very cold facts, by the fourth year, five out of ten children need caries treatment, five out of ten have some manifestation of malocclusion, about one in ten has some form of gingivitis, about one in ten has a prematurely lost tooth for which there is need of a space maintainer, and about two out of ten have appallingly poor oral hygiene so that they require prophylaxes (not that the rest don't) and nearly three out of ten have not only experienced dental caries but they have open cavities that urgently need filling. This information is very difficult to obtain because there isn't a list of pre-school children any place in the country. You have to hope they will come into a clinic. The Burlington project has been very good in this respect, as have Dr. Compton's Riverdale project and Dr. Ralph Connor's study in Grimsby, of which you will hear more. So, summing up, there definitely is lots to do.

Moderator: Now Dr. Compton, from a public health standpoint, are there any community dental health programs which specifically are directed at the pre-school child?

Dr. Compton: I think a great deal of credit in this respect belongs to the Niagara area. The two outstanding dental health programs in the Welland and District Health Unit and Lincoln-St. Catharines Health Unit have pioneered in this respect and have focused a considerable amount of attention on the pre-school segment of the population for a good many years. Personally, I am more familiar with the content of our program in the city of Toronto, where, for the past two years we have had underway an experimental pre-school program in the

Riverdale area of the city. This program is manned by a dental hygiene team. A dental hygienist attends child health centres to which pre-school children are brought for health supervision, immunization, and so forth. They also receive dental examinations and the parents are counselled. Children requiring dental attention are referred to their own dentists, or clinics in the area, or a combination of both. Children that are free of defects, and those that have had all defects corrected, are eligible for additional topical fluoride applications which for the past six months or so have consisted of single applications of 8 per cent stannous fluoride. Other programs in British Columbia devote part of their attention to pre-school children.

Moderator: It is heartening to hear that there are programs directed toward this group because, I am sure, many of us have felt in the past, that most of our public health programs were concerned only with the school age child.

The private practitioner has a role to play in the dissemination of dental health education.

What about the parents' co-operation in this respect, Dr. Bilkey, do you find they co-operate with you reasonably?

Dr. Bilkey: It may be an admission of my own inability to convey certain measures to parents when they are with the children but, frankly, I spend a fair percentage of each child's appointment, talking with the parents, preferably the mother, trying to readjust her appreciation of her child's dental health. And I try neither to overdo it nor to be antagonistic, but rather to explain the situation as I see it, the things that they can do and the measures which I feel are comparatively simple and which, if instituted in the home, would greatly benefit that child's dental health. Many of them return to the office six months later with an equal amount of dental devastation. I have to admit more failures than successes in this field. Parent co-operation, generally, in

my practice, is poor. The financial responsibility however, of providing the necessary treatment is often a more effective means of gaining co-operation.

Moderator: Dr. Grainger, what do you think is the effect of the present neglect of treatment in the pre-school age group?

Dr. Grainger: Well, I think it causes a waste of the dentist's time which is at a premium anyway, causes suffering to the children, increases the treatment cost to the people and finally increases the amount of treatment that has to be done. For example, consider the chain of events that occurs if a single little pit cavity is neglected. An eventual pulp exposure and subsequent gross infection may occur requiring that the tooth be removed. A space maintainer is then required which may cost 4 or 5 times what the filling would have cost. If the spacer is neglected, you are going to need to regain the space which is going to take a longer time and cost more. If the space is not held or regained, the patient is likely to develop into a full-blown orthodontic case within a few years. So I can say conservatively, I would think the cost could be multiplied 100 times if you neglect the pre-school age. I think that almost any conscientious parent, if it is explained what this means in economics, in suffering to his child and so on, would co-operate.

Moderator: Coming from a man as acutely aware of statistics as Dr. Grainger, I find that statement of 100 times rather a startling and persuasive one. *Dr. Compton, how adequately in any given Canadian province such as B.C., or Ontario, are the communities' dental public health programs aimed at the pre-school child?*

Dr. Compton: Well, I would say that the coverage by any given standard is far from adequate. In the thinking that developed in the profession during the years following World War II it had been hoped to train public health dentists who might

eventually be employed on the basis of one public health dentist in each health department or health unit. But, of course, if there is a shortage of dental practitioners in this country, there is an even more acute shortage of public health trained men, and in order to cope with this aspect of the problem, we have modified our thinking in favour of a regional type of coverage whereby one public health trained dentist acts as dental consultant to two or three adjacent health units or health departments, and has working under his supervision, in each area, one or more dental hygienists. This has been referred to as a regional concept or the development of a dental health program on a regional basis. We have so far an example of that in the upper and lower Fraser Valley Health Units of B.C. The Dental health program there would cover, possibly, one quarter of the population of B.C. Here in Ontario, a similar arrangement obtains in Halton and Wellington County health units which have formed a region from a dental standpoint. A lot more could be done in that respect and I think there is a tremendous opportunity for expansion of dental health programs on this basis.

Moderator: One of the problems many of us have heard about in the past from people who have not expressed a great desire to care for young children is that it is very difficult to provide certain treatment services for these pre-school children with any degree of effectiveness. I should like to ask the only practitioner on this panel whether or not there are any fairly simple but effective operative measures which are practical and will result in adequate lasting treatment?

Dr. Bilkey: I feel very strongly that it's easier for the average practitioner in dentistry to do competent, lasting and self-satisfying dental treatment, in the operative field for children, than it is to do the same for the average adult. I have forgotten now, and I am rather glad to say

it, how many years I spent in general practice with adults, but I did find that dental treatment for adults was much more difficult, strictly on a mechanical basis, than it was for children. With rubber dam, with local anaesthetic and with high speed, it's almost as easy for us now to do competent, lasting, dental treatment for children, as it is to be a good competent housewife and mother with automatic driers, dish washers and what have you. Frankly, I feel dentistry for children, operative dentistry in particular, is easy and can be very rewarding.

Moderator: Do you think, Dr. Grainger, parents are aware of their children's needs at the pre-school level? We do know that children are examined at school in many communities. Various informative cards of one type or another are employed to inform parents of the needs—what about the ones who have not as yet reached school, are the parents aware of the problem?

Dr. Grainger: I don't think the lay people recognize dental defects until they are very obvious aesthetically. Parents are often very surprised to see the defects pointed out to them in their own children. No, I think the answer is that the parents are not aware.

Moderator: I am now going to ask each of the panel members a provocative question. I want to know from the panel whether or not they are in favour of a publically supported treatment program? Now let me make known the conditions. I am not here referring to the indigent or welfare groups. We realize that a special problem exists in that area.

Dr. Grainger: I say absolutely no. I am not in favour of it because so much of the control of dental disease depends on the co-operation of the person. If you put in free treatment, people are going to get even more careless than they are now when they have to pay for it once

in a while. In principle, I don't think any service that is "free" is really appreciated and I hope the step never comes. I think it might result in even worse dental conditions than we have now.

Dr. Compton: Given a choice, Mr. Moderator, I favour the private practice facility. I think there are certain aspects of private practice which cannot be duplicated in a publically supported treatment program. Firstly, there is the often referred to and very important relationship between the dentist and the patient. The opportunity for the child to establish a steady and lasting relationship to his family dentist, I think, is something that should never be underestimated from the psychological viewpoint. Second, and even more important, I think, is this: where the parents assume a measure of responsibility, the results are going to be more productive and therefore more long lasting. I do not think you can establish parent responsibility unless parents have a financial stake in the method of dental care provided. This is ideally feasible in a private practice setting.

Dr. Bulkey: I am quite against publically supported dental treatment programs. I would be quite against them for the reasons so capably enumerated by the others. Dentistry for children shouldn't be and made to be different. If we automatically put all children into one category as needing publically supported dental treatment programs, to me dentistry for children would suffer greatly. There has been too much of a tendency in the past to categorize it as something that was foreboding. Too many parents' children might automatically become indigents that I would be against this.

Moderator: Dealing again with the problem of the provision of treatment, and let's face the fact that in some areas it is politically injudicious not to have it if one wishes to proceed with an educational program, we have heard the term 'incremental care' in respect to these

dental treatment programs. *Dr. Compton, just what do you mean by incremental care?*

Dr. Compton: Incremental care refers to a pattern of corrective dental care which is geared to the unique characteristics of dental disease. It must be remembered that we are dealing with a disease entity which differs from most other physical defects in that it is cumulative and non-resolving. Dental lesions do not resolve spontaneously. Consequently, in the absence of adequate control, intervention, or interception, one is faced with the accumulation of a backlog of defects which poses economic and personnel problems. Incremental care attempts to forestall this in the following way: in an organized scheme there is admitted in the first year of the program a group of children in the youngest age bracket for whom care can be adequately provided, and these children are given care to the extent of their accumulated dental treatment needs. In the second year of the program, a new starting group of the same starting age bracket is admitted and likewise given dental care to the extent of their accumulated treatment needs. The group that was previously admitted in the previous year will only have accumulated fresh treatment needs to the extent of one year's increment, and consequently the amount of care they should require will be rather less, in fact it should be minimal, all other conditions being equal. Consequently, they will require only maintenance care during that year. In the third year a new starting group is again admitted in the lowest age bracket. The two previous starting groups will again only require maintenance care to the extent of one year's fresh increment. This type of program can be continued indefinitely to the limit of capacity of the available dental treatment resources. That would be an incremental care program.

Moderator: That is a very adequate explanation and it certainly seems the only

feasible method of attempting to provide treatment care. This rather hit and miss procedure which we find in so many locations certainly does not lend itself to progress in this field. Now at this pre-school age group, I think we must face the fact that perhaps all these children are not as desirous of having dental care as we are in providing it or indeed the parents are in attempting to see to it that the children receive treatment. Their behaviour at times may be refractory. *Dr. Bilkey, can we adequately cope with these behaviour problems and can we change this refractory attitude to one of co-operation and ultimately to a tolerance and acceptance of necessary dental treatment?*

Dr. Bilkey: I think that to some people all children are basically detestable. That is, of course, to the extent of having to do something for them that could be regarded as being unpleasant. Generally speaking, though, most of us like children, and children seem to like us once they are sure that we are going to do what we have to do in as kind a fashion and as in as gentle a manner as we possibly can. I think that the so-called problem child is a highly over-rated subject. I would think that less than 5 per cent of children are really incorrigible as dental patients. Most children are slightly averse to a new environment, particularly one that could be considered awesome such as when they come in and see the equipment and the white gowns and all the other things. But I think with a reasonable display of kindness and a generous mixture of firmness in the absence of the parent, we can make any child a desirable patient—one who will accept whatever dental measures we have to do in good faith. I do feel that there are more problem adult patients than child patients.

Moderator: I would like to ask Dr. Compton a question which I feel might be of pertinent concern. *Does a topical application of sodium fluoride constitute an*

economically worthwhile caries control measure?

Dr. Compton: In answer to that question, the cariostatic value of sodium fluoride has been adequately established and described. Consequently, this question involves consideration of two other factors, first, parent convenience in reference to the conventional Knutson method of applying sodium fluoride and second, consideration of the value of professional time. In my opinion, the Knutson technique has certain handicaps or drawbacks because of the involved character and the frequency of the appointments. Having regard for the fact that parents are now required to bring their children for health supervision, immunization, toxoiding, polio vaccination, and so forth, the number of visits to health centres, dentists, physicians and the like, means that the mother is more often away from home than back home. And the problem of arranging supervision for the younger children in the home is a very real one.

The other question involving the value of professional time is an extremely important one. I feel that in terms of the results that can be expected from topical fluoride applications the employment of a dentist for this purpose is, generally speaking, uneconomical. This disadvantage is somewhat reduced if a dental hygienist performs the application. Nevertheless, all factors considered, I think the application of sodium fluoride, unless expressly desired by the patient, is generally not in the best interest of the public from an economic standpoint.

Moderator: *Would you care, Dr. Compton, to give us your viewpoint in respect to the current status of the topical application of stannous fluoride?* I know that you have a program of this nature in Toronto and you are perhaps, one of the most informed people in this country on the subject.

Dr. Compton: Stannous fluoride is one of the alternative agents to sodium fluoride which has received consideration for a

number of years. The results of studies which have been conducted, in the main, in Indiana by the University of Indiana and the Indiana State Board of Health, also by our own Department of National Health and Welfare in Ottawa and also in Minnesota, have indicated a superior caries control value for stannous fluoride as compared to topical application of sodium fluoride.

Of particular interest have been investigations into the use of an 8 per cent solution of stannous fluoride applied topically once a year rather than the series of four applications at ages 3, 7, 10, and 13 as in the Knutson technique with sodium fluoride. The limited work that has been done so far indicates that stannous fluoride applied in this way also has superior caries control value and in the Riverdale Pre-School Project in Toronto we are currently investigating its value in the early control of dental caries in the pre-school child. The applications are being done by a dental hygienist, and the clinical examinations are being supplemented by bite-wing X-rays. Of particular interest is the fact that in children between the ages of 2 and 3 who appear to be clinically free from caries upon visual examinations, bite-wing X-rays certainly indicate incipient carious lesions and it would appear that that is a very critical age. It may well be that stannous fluoride, if applied at this early age, up to 2½ years, may be of considerable value in helping to control dental caries. The second point is that single applications spaced out at six month intervals or one year intervals fit in much more readily with the established pattern of private practice. So, from both the public health point of view and the private practice one, stannous fluoride is of great interest.

Moderator: Now I hate to inflict upon this meeting the taint of commercialism but let's face the fact that finances are involved in the provision of dental care to anyone. As some wag once said "money isn't everything, sometimes it's not even

99 per cent." I would like to ask Dr. Bilkey if we can expect adequate remuneration for our services to pre-school children particularly in view of the fact that time is the main commodity with which we are dealing? And secondly, how can we best prevent misunderstanding about fees?

Dr. Bilkey: I am quite definite that any dentist can make an adequate living doing solely dentistry for children. If you have a true general practice, for which I have the highest admiration, and can see children only occasionally whenever the need is there, you have ample opportunity, justifiably, to charge for the length of time that you have taken in doing whatever dental treatment was required. In my practice, devoted as it is to children, I have to base my fees on a minimum hourly schedule and I find that I can do this and justify it both from the parents' standpoint and my own. I think that on the occasions when I encounter some difficulty over fees, and that doesn't happen too often, the situation could have been prevented had I taken the opportunity at the beginning, not in a way that was mercenary or grasping, to explain the needs of the child to the parent and to give her an estimate of the approximate cost for the total dental treatment required. It doesn't seem to matter what financial category the parents fall into. Some of them may be handsomely endowed yet still slip away and establish a mental fee for your services rendered that falls short of the one which you assess. And after a series of appointments, there can be quite a variation between their total fee and the actual one, and it's upon these little factors that misunderstandings are created. These are best averted before they happen. The very worst thing that can happen by giving an estimate is that a patient may in error assume that your fees are untoward. This is the time, of course, when you might suggest that only a relative could do it for less or whatever suggestion comes to mind. I do

feel that good public relations more or less demands of us that we, in these times, when everyone seems to be concerned with dollars and how far they'll go and how few of them we seem to have, should try to avoid misunderstandings.

If we could just for a moment go back to that stannous fluoride question. I always develop some feeling of resentment towards topical applications of sodium fluoride or stannous fluoride, worthy and all as they may be. Perhaps this is unreasonable but we are pretty well inundated with dental problems that we can't, going all out, cope with. These problems are accumulating faster and faster, and from the personnel standpoint we are short. It is impractical to be required to perform a topical application or a series of 3 or 4 of them once a year for all the children in our practices, burning up more time—and time is something we have so little of, when the fluoridation of communal water supplies would achieve so much in such a short time and without any effort.

Moderator: That is an interesting comment. Some time I should like to see Dr. Grainger develop some statistics in respect to the employment of topical applications of fluoride in fluoridated areas. It might be rather interesting to know whether there is any additional effectiveness from such applications but perhaps, here I may be displaying my ignorance as some work in this area may already have been done. Dr. Grainger, another question in respect to orthodontic care. *Is it possible to diagnose malocclusion in a pre-school child and can treatment be successful at this time?*

Dr. Grainger: Well Mr. Moderator, I am very glad we have recognized, at last, on this panel, that filling cavities is not all of dentistry. The implication of the question is—can the average dentist in the community do these things, can he diagnose malocclusion in a pre-school child, and can he undertake treatment of

the pre-school child's malocclusion? I have to say that my personal suspicion, having been a private dentist, is no. But I do think that in the future the answer will be yes. The development of this line of treatment is probably in the hands of the orthodontists. If the orthodontists don't move in this field to spread their knowledge a little further and to see that orthodontic care is rendered to the pre-school child, possibly the paedodontists will.

Moderator: We have not as yet, mentioned the handicapped youngster. *I should like to ask Dr. Bilkey where he feels dentistry should be performed for the handicapped child?*

Dr. Bilkey: In cases of severely handicapped children where the management problem is extreme, I feel that treatment definitely ought to be done in a hospital environment. At the end of an appointment of struggling with a child who is mentally deficient or incapable of remaining reasonably still in the chair for one reason or another, I am exhausted. The dental treatment, at best, will have been of a compromise nature taking far too great a toll on the child primarily and secondly on me. In Toronto, of course, we have an excellent opportunity for these cases. The Sick Children's Hospital will eagerly welcome them and do a wonderful service for them. What the situation is in other centres I don't know.

Moderator: Perhaps I might indicate to this group that I am sure you realize there is a problem in respect to hospital care in the Province of Ontario. We are told that the provision of dental services within the public general hospitals of this province is illegal. Therefore for some time we have had a great many criminals within the ranks of the dental profession. However I am pleased to report that the Ontario Hospital Services Commission, the group which is responsible for the administration of the Public Hospitals

Act of Ontario, has gone on record in favour of the proposals made by the Royal College of Dental Surgeons in concert with the Faculty of Dentistry. It remains now only for approval by the Minister of Health of this province and ultimate fulfillment within the general regulations and model by-laws of the hospitals in this province. Within this last year, the profession has made significant advances in respect to hospital care.

I should like if I can, to attempt to sum up what this panel has said. Dr. Grainger feels that the most salient feature of our dental disease problem is a lack of knowledge. Dr. Compton is inclined to think it's not so much a lack of general knowledge, as a specific lack of appreciation of the importance of the deciduous dentition and the various effects of the deciduous dentition in later life. Dr. Bilkey also agrees that public apathy is the number one salient feature. Dr. Grainger is banking on health education. The other two members of the panel feel that fluoridation is the chief answer to our problem, although I am sure you understand no member of this panel believes that only one particular procedure is important.

In respect to the provision of treatment in the dental public health programs of this province two members of this panel are emphatically opposed. The other has a qualified no with, however definite leanings toward the negative.

Dr. Grainger feels there are real treatment needs for the pre-school group and that in the main, parents are not particularly aware of those needs. And of course, this lack of awareness leads to neglect and this in turn, compounds treatment needs in later years and you have heard the statement from him that he feels, maybe, by 100 times. He feels too,

that malocclusion can be diagnosed in the pre-school age and there is a growing volume of evidence of the usefulness of interceptive orthodontics.

Dr. Compton states there are a few programs which do relate to the pre-school child such as in the Niagara area and in his own program in the Riverdale district of Toronto. He generally feels however, that the coverage is inadequate as far as this particular age group is concerned. And then too, he indicates that the critical shortage of public health personnel is certainly most germane. If treatment is to be provided, he feels that provision should be made on the basis of incremental care and that it should be designed to deal with the main characteristics of dental disease that is, the non-resolving and cumulative characteristics of caries and its various sequelae. Dr. Compton believes that while the topical application of sodium fluoride is not completely inefficient nevertheless he would like to reserve some of his enthusiasm. As far as stannous fluoride is concerned, I think Dr. Compton feels that we have something here which may be of significant value.

Dr. Bilkey doesn't seem to be highly elated about the co-operation of parents but I think knowing him and knowing his practice, he is perhaps being overly critical of himself, because I am quite sure he has met a reasonable degree of success. He emphatically states that there are simple and effective operative procedures which can provide adequate and lasting treatment. He feels that behaviour problems, in the main, can be effectively handled and that good parental co-operation is possible, as well as adequate remuneration for services. He is inclined to think, however, that services for the handicapped youngsters should be performed in the hospital.

It will soon be generally recognized that the citizen is best made when a child.

Charles H. Mayo.

Gingival Hyperplasia: Alveoloplasty With Ridge Extension*

JOHN A. FOLKINS, D.D.S.***, Vancouver, British Columbia*

Article No. 2

INTRODUCTION

Hyperplasias are one of the most common tumors found in the oral cavity. They are not true neoplasms but, rather, are inflammatory reactions which have developed from a continual irritation over a long period of time.

One type manifests itself as soft pendular or pedunculated folds along the denture margins and is known simply as gingival hyperplasia. Another type is frequently found in the palate beneath an ill fitting full denture, and particularly one with a suction chamber, and this is known as inflammatory papillary hyperplasia. Where we have two or more folds the hyperplasia is known as "bifid". When the denture margin is resting between two of these folds ulcerations may occur at the point of contact and cases are recorded where these ulcerations have become malignant.

All cases of hyperplasia result from continued irritation from ill fitting full or partial appliances. The indirect cause is neglect on the part of the patient—failure to consult his dentist when he notices these irritations arising.

Hyperplasias appear to occur more frequently in mouths where immediate dentures have been inserted and the patient has omitted to have the denture relined after a reasonable interval. At times it is

difficult to impress on the minds of patients the necessity for relining an immediate denture insertion. When patients have undergone multiple or mass extractions and insist on immediate dentures we must remember that it is a very unpleasant experience and some of them will not absorb, and therefore will not act upon, our instructions to return for the necessary reline.

Dentists have a responsibility to help these patients understand the importance of this phase either by our automatic systems of recall or, if necessary, by telephone or letter restating again the importance of this final phase of successful denture insertion.

No attempt should be made to insert new dentures over hyperplastic areas. Gingival hyperplasias may be removed by excision, and palatal hyperplasias by shaving small areas at a time. All hyperplastic resections should be biopsied for pathological evidence.

Ridge extension by alveoloplasty is a surgical procedure which is more elective in nature and was first introduced by Kazanjian in 1924. It is indicated in extensive hyperplasias, obliteration of the alveolar ridge by scar tissue, muscle attachments at the alveolar crest and in some cases of alveolar atrophy.

A preliminary evaluation of probable success is based upon the size and position of the lesion relative to the surrounding anatomical structures.

Each case will differ as to the degree of success possible. A successful result is

* This is the second in a series of interesting and unusual case histories.

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readily obtained in the maxillary anterior region with the only limitation being the base of the nasal spine. Good results may be obtained in the maxillary posterior regions unless the malar process is unusually prominent. In the mandible, the position of the mental nerve will determine the degree of extension possible, and in extreme cases of alveolar resorption the geniotubercle and mental protuberance will be limiting factors determining our boundaries. The attachment of the geniohyoid on the lingual surface of the mandible may prevent any great degree of extension in that area but the geniotubercle, as with the nasal spine, can in some instances be reduced slightly.

In ridge extension by alveoloplasty each case must be judged on its own merits, and apart from the above mentioned obstacles, some excellent results can be obtained.

Mention must be made of a distinction between the presence of superfluous tissue along the alveolar crest which is hyperplastic in nature and the presence of loose tissue along the alveolar crest which is the result of extensive alveolar atrophy with the soft tissues remaining in their normal position. In some instances in the mandible the alveolus may atrophy almost to the level of the mental protuberance and form a flat shelf with it. This condition does not lend itself to alveoloplasty and particularly in the elderly, it is sometimes preferable not to disturb these flabby but normal tissues which provide a degree of denture retention.

The following case report will illustrate the pathological changes which can occur because of prolonged wearing of an ill-fitting denture. A mass of scar tissue was present tying the vermilion border of the lip to the alveolar crest. The surgical treatment served a twofold purpose: excision of the scar tissue while extending the maxillary ridge.

After the patient had worn an ill-fitting denture for 26 years treatment could not consist of simple excision.

CASE REPORT

A 74 year old woman was referred for diagnosis and treatment of a growth which was preventing the insertion of a full upper denture.

History of Present Illness

Although she had been wearing her present denture for 26 years, she claimed that she had had no discomfort until about two years ago when she noticed that it was becoming more difficult to retain her upper denture because of the formation of superfluous tissues under her upper lip. She had met this difficulty by periodically filing off some of the flange from the front of the denture. About a year ago she noticed that two ulcers had developed in the buccal sulcus, one on each side, which became very painful if she wore the denture for any more than a few hours at a time. The week before her referral she had visited her local dentist because the ulcers had been causing her more discomfort than usual. She stated that she had never worn a lower denture.

Oral Examination

Her old upper denture, discoloured, vulcanite in type, was obviously worn with difficulty. The labial flange had been filed to the necks of the artificial teeth. Examination of the mouth itself revealed it to be edentulous with the exception of the mandibular right cuspid which was loose. Examination of the maxillary arch revealed an extensive hyperplasia of the mucosal and gingival tissues, extending from second bicuspid to second bicuspid and gradually eliminating the fold until by the time it reached the mid-line the mucolabial fold was completely eliminated. Numerous segregated keloid nodules were attached to the inner surface of the cheeks. (Fig. 1). These hyperplastic areas were smooth to touch and normal in colour. In the regions of the buccal sulci the tissues exhibited ulcerous surfaces which were painful to touch but no tenderness was present in any other areas of the lesion.

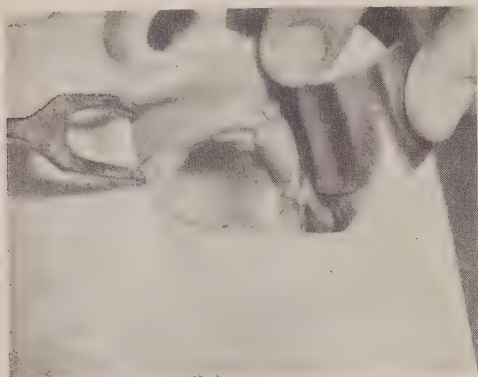


FIGURE 1

Preoperative photograph showing extent of hyperplasia of the gingival mucous membrane. Note complete absence of the labial sulcus.



FIGURE 3

Another photograph showing remaining hyperplastic areas after excision of the smaller nodules.

Impression

Marked hyperplasia of gingival tissues and oral mucosa.

Note: Before proceeding with any surgical correction the patient was requested to have a complete physical examination because of her advanced age.

Report of Physical Examination

The laboratory reports were within normal limits and therefore will not be quoted: The examining physician reported the patient in excellent general health for her age.

Treatment and Course

Surgical procedure was instigated and

carried through by gradual stages at the office. On her original visit, and under infiltration anaesthesia, small specimens of tissue were removed from the ulcerated areas and forwarded for pathological examination. The patient was advised to use a warm salt solution as a mouthwash and to return in about two weeks time, after her physical examination had been completed. The denture was kept at the office to be used as a splint in later stages of correction.

Pathological Report

"Sections through the small portions of tissue show considerable thickening of the squamous epithelium which is quite intact except where it is lost by erosion and ulceration. Beneath these sites there is quite abundant lymphocytic infiltration in the sub-epithelial tissue which is markedly fibrotic but there is no suggestion of any malignancy." (Fig. 2).

Diagnosis

Chronic ulceration, gingival mucous membrane.

Treatment and Course

(Stage I.)

When all ulcerated areas had healed corrective treatment was started. Under

FIGURE 2

Micro-photograph showing irregular thickening of squamous epithelium and marked chronic inflammatory reaction.



infiltration anaesthesia several isolated nodules of hyperplastic tissue were excised and sutured. (Fig. 3). One week later these sutures were removed and two weeks later we began the second stage of correction.

Treatment and Course

(Stage 2.) (Figs. 4 A-B-C).

After local preparation, the middle and anterior superior alveolar, infraorbital and nasopalatine nerves were infiltrated using 2% procaine with epinephrine. An

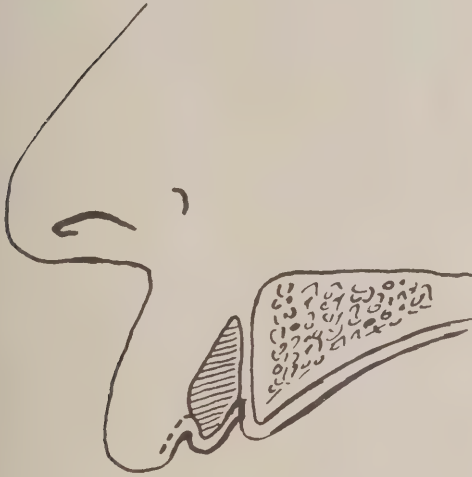


FIGURE 4A

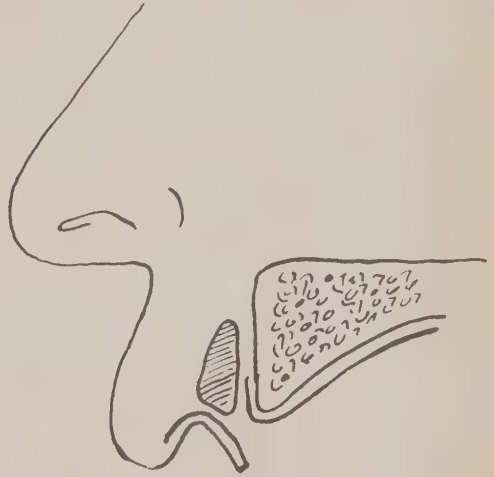


FIGURE 4B

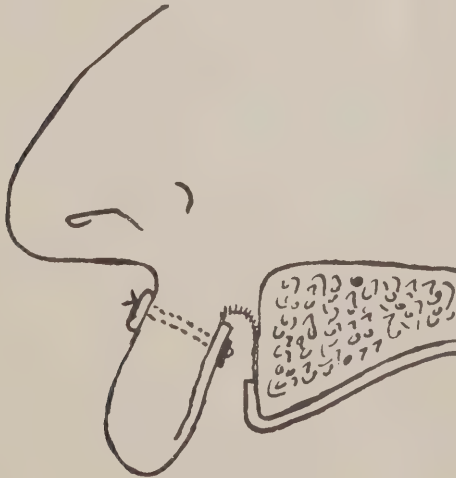


FIGURE 4C

Extension of the maxillary ridge. Note that the periosteum is left intact.

incision was made along a line extending from the left buccal sulcus in the bicuspid area diagonally and mesially almost to the alveolar crest. This incision continued around to a similar position on the right side, then diagonally to the buccal sulcus in the right bicuspid area. On both sides the incision extended through the buccal sulcus and down on the inner surface of the lip from a distance of about one centimetre. This flap was completely retracted by careful dissection, separating the oral and labial mucosa from the tissues which lay beneath. After the mucosal flap was completely retracted the underlying wedge of hyperplastic tissue was dissected from between the maxillary periosteum and the musculature and soft tissues of the lip. After the wedge had been removed the maxillary periosteum was further exposed to an additional depth of one half centimetre to permit approximation of the flap to its fullest extent. The flap of labial mucous membrane was then approximated to the inner surface of the lip and held in position by three intra-extra-labial silk sutures through six pearl buttons, (Fig. 5), three buttons on the inner and three on the outer surfaces. The direction of these sutures was outward and upward in order to oppose any downward pull of the mucosal flap. The buttons prevented the sutures from cut-

ting through the tissues. The extra-oral buttons were covered with a sulphadiazine paste and a gauze dressing was applied.

Note: Great care was taken during the above dissection in order not to damage the maxillary periosteum, thus preventing the possible destruction of the blood supply to the bone beneath.

Instructions to the Patient

A warm saline mouthwash was suggested every two hours.

Medication

Intramuscular penicillin, 400,000 units daily as a precautionary measure. Codeine, grs $\frac{1}{2}$ every four hours if necessary.

Treatment and Course

On the second postoperative day there was only slight swelling, and the patient complained of very little discomfort. On the seventh postoperative day healing was apparent. Examination showed that the periosteum had been quickly covered with granulation tissue. There were two areas just distal to the cuspid region on each side where the mucosa had been pulled down by tension leaving the buccal sulcus only partially complete in these areas. The sutures and buttons of stage 2 were removed. Then, using infiltration anaesthesia, two elliptical incisions were made one in each cuspid area and using the same technique as described in the previous operation, the mucosa was carefully dissected and retracted, the sulcus extended by incision, the mucosal flap was then positioned into the line of incision and again held in position by intra-extra labial sutures and only four buttons. (Fig. 6). The buttons were covered by a sulphadiazine paste and a gauze dressing. Medication was continued as before. By the seventh postoperative day no appreciable swelling was noted. The two mucosal flaps in the cuspid areas had held in position and the labial sulcus was established. The sutures and buttons were removed and the patient was requested to return in three days time after having

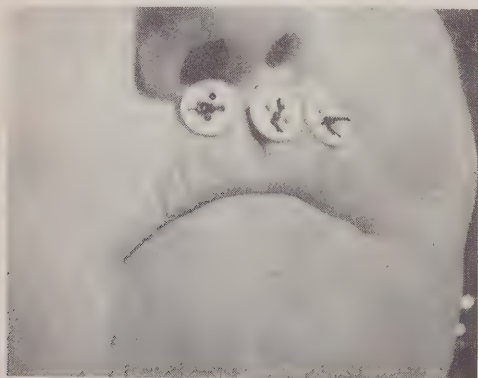


FIGURE 5

Inter-extra labial sutures through buttons to increase depth of labial sulcus.



FIGURE 6

Treatment repeated to further increase depth of labial sulcus.

visited her family dentist for an impression for a full upper denture.

Note: Specific instructions were given relative to this denture. It was to be used as a splint for surgical purposes only, the original denture would serve the purpose and was therefore returned. The other request was that the desired height of the flange of the planned denture, (now a surgical splint) should extend one-half centimetre beyond normal muscle trim from tuberosity to tuberosity.

Operation

One week later, using infiltration anaesthesia, an incision was made extending from tuberosity to tuberosity, one-half centimetre in depth, along the base of the buccal and labial sulci. The depth of the incision was almost to the base of the maxillary prominence in the first molar areas and on the labial surface almost to the base of the nasal spine. The flanges of the extended denture were coated with surgical paste, the inner surface of the vault of the denture sprinkled with denture powder, after which the denture was inserted into position along the line of incision and held in position by occluding with the retained lower cuspid tooth. (Fig. 7).

Medication

Intramuscular penicillin, 400,000 units daily as a precautionary measure. Code-

ine grs $\frac{1}{2}$ every four hours if necessary. The patient was instructed to favour a light diet, use a warm saline mouthwash after meals but not to disturb the denture. She was advised that this was the period when much patience and perseverance was necessary because of the fact that the denture must be retained in position, continuously, for one week.

Note: It may be asked why this last stage was necessary. In any surgical procedure of a plastic nature, once initial healing has occurred and the sutures have been removed, continued healing results in the further formation of scar tissue and a tightening of the tissues. Without the immediate insertion of a denture the depth of our maxillary sulcus may be reduced by as much as half, depending upon the case. But the insertion of the denture into the incision is one method of preventing too much contraction by forcing the growth of new epithelium over the surface of the incision up over the flange of the denture, and in this way help to maintain maximum depth of the sulcus.

Progress Notes

On the third day after the denture had been inserted the patient had very little pain or discomfort, and swelling was negligible. On the fifth day the only discomfort experienced was a strong desire to remove the denture. This desire had resulted in increased nervousness. On the eighth day the denture was removed and

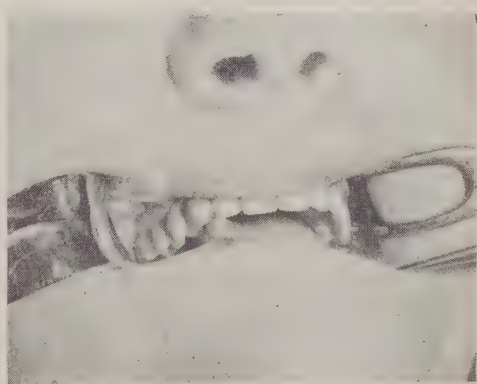


FIGURE 7

Denture inserted into open incision.

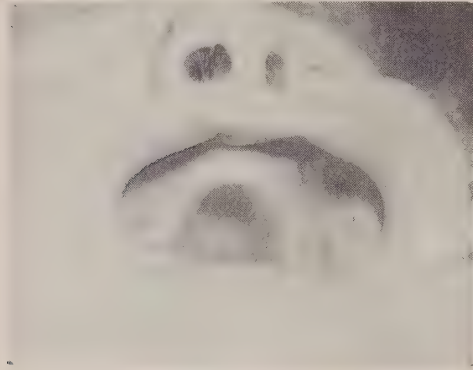


FIGURE 8

Complete restoration of maxillary ridge. See Figure 1 for comparison.

the extended sulci presented an unusually good appearance. Healing had been progressive with granulation tissue having formed in all areas. The denture was

cleansed and reinserted and the patient advised to wear it continuously, except for cleaning after meals, and to return in two weeks. When she returned two weeks later healing was complete. Under infiltration anaesthesia several of the remaining small keloid nodules on the inner surfaces of the cheeks were removed and the following week the remainder were removed by excision. The labial and buccal sulci were normal with regeneration of all tissue in these areas complete. (Fig. 8). The patient was referred to her family dentist for an impression for an immediate lower denture and a few days later this was inserted after the mandibular cuspid had been removed. Strict instructions were given that she return to her family dentist for new dentures after shrinkage of the mandibular alveolus in the region of the cuspid was complete.

925 Georgia St. W.

Statement of the Relation of Milk Consumption to Dental Caries

THE RESEARCH COMMITTEE—CANADIAN DENTAL ASSOCIATION

In response to a request by the Secretary of the Canadian Dental Association, this Committee has reviewed recent studies dealing with the effect of milk consumption on dental caries.

These studies do not support the concept that drinking milk increases the incidence of dental caries. A recent abstract¹ stating that milk consumption parallels an increase in dental caries is an erroneous version of the original article² in which the author speculated as to a possible causative relationship.

Several reports^{5,6,7} indicate that an increase in milk consumption (possibly associated with other dietary alterations)

correlates with a reduction in caries incidence. The diets of caries-immune children have been reported to contain from three to six glasses of milk per day³.

BIBLIOGRAPHY

1. Dental Abstracts, "Milk consumption and dental caries" 2(2):121, 1957.
 2. Dubois-Prevost, R., "Lait et carie dentaire" Rev. Franc. D'Odont-Stomatol. 6:693, 1956.
 3. Grainger, R. M. Report read at the O.P.H.A. Convention, Toronto, 1955.
 4. Mack, P. B. and C. Urbach, "A study of institutional children with particular reference to the caloric values as well as other factors of the dietary." Society for Research in Child Development, XIII, Serial No. 46, No. 1, 1948.
 5. Mellanby, M. and H. Coumoulos, "The improved dentition of 5 year-old London school children." Brit. Med. Jour. 1:837, 1944.
 6. Shaw, Jas. H., "Nutrition and dental caries." Survey of the Literature on Dental Caries. Publication No. 225, National Academy of Sciences, National Research Council.
 7. Sprawson, E., "Preliminary Investigation of the Influence of Raw Milk on Teeth and Lymphoid Tissues." Proc. Roy. Soc. Med. 25:649, March 1932.
- Washington, D. C., 1952.

Considerations in the Settlement of Estates in the Matter of Dental Practice

ARTHUR M. GEE, *Hamilton, Ontario*

The purpose of this paper is to assist a dentist's widow, or those whose duty it may be to make the most satisfactory arrangements for the continuance or closure of a dental practice.

What to do First Right after Decease

Have some responsible, trusted person remove any valuables such as money, gold, or precious metal scrap and personal papers from the office immediately; and the office be closed with a suitable notice on the door stating that the office will be open within two days.

Arrange that the dental nurse or assistant be retained for a period of at least a month following decease, and that the office be open during the usual hours.

Arrange with a colleague or colleagues that patients whose treatment is not complete will be cared for and the nurse advised.

Instruct the nurse to record all money paid in the usual manner and to utilize the time to bring all accounts receivable records up to date, and to prepare statements for all dental fees whether the treatment is completed or incompleting.

The nurse, also, should arrange for patients whose cases are only partially completed to make appointments with the assisting dental colleague and should furnish this dentist with all necessary charts, models, prosthetic appliances, radiographs, etc. to allow him to complete the service.

The nurse should be instructed to take the name, address and telephone number of inquiring patients, or those seeking information, and to say that "arrangements may be made in order that you may continue to come to this office, and if you will be patient with us, I shall advise you, by telephone, just as soon as I know."

The nurse, also, should utilize her time by making a complete and correct list of all patients with their addresses, and may even indicate, by some means, their classification: e.g. co-operative, non-co-operative, financially unstable, etc.

Within a Week After Decease

Now, advice should be sought as to the possibility of sale of the practice, the advisability of maintaining the office, and for what period of time.

In seeking this advice, one should turn to personal friends in the profession whose business ability has earned respect, to the executive leaders of the local dental association and to the manager or representative of the dental supply dealer with whom the deceased had been conducting business.

There are many misconceptions of the value and saleability of dental practices. Generally speaking, it should be understood that a general dental practice without a dentist usually consists of two things, patients and fixed assets.

The persons who comprise the practice have been patients because of their confidence in the dentist and his ability to perform a good service for them, because he is the only dentist in the area, because his fees are considered more favourable than those of another colleague, or simply because of personal friendship.

The saleability of a practice is dependent upon several factors:

1. The value of the location, relative to its environment.
2. The layout of the office with regard to efficient operation as required by a man with new and possibly more modern ideas.
3. How modern and complete is the equipment in use.

4. The type of patients, in general, who make up the practice.
5. The number of dentists in the immediate area relative to the potential of patients.
6. The availability of potential purchasers.
7. The economic conditions: e.g. easier to sell when times are unfavourable.
8. The time of year relative to the graduation of new dentists.

The value of a dental practice lies principally in the equipment, fixtures and furniture of the office. The value of so called "good-will" and of the lease is usually negligible under present conditions.

The gross volume of practice in the office, also, will be a deciding factor.

The dental supply dealer, in Canada, due to his wide-spread contacts among the profession, can be a valuable aid in determining the value of the practice, and in providing the necessary publicity to acquaint prospective dentists with the opportunity to purchase.

Most of these dealers have a formula for arriving at a fair value of the fixed assets, and can be trusted to be very honourable and helpful in their assistance.

It is well to note, however, that a piece of dental equipment which may have been considered satisfactory to the operator, such as a dental pump chair, may have been manufactured thirty-five or more years earlier, and may not be saleable in its present condition or colour, and on which depreciation has long since been taken. It may, therefore, have a nil value, because it could not be sold on the present market.

Many dentists, because of their skill and personality, are able to maintain a very high level of gross income using equipment which would be considered quite inadequate by more recent graduates who are taught to employ more modern practising aids.

What Action Should Be Taken

If it is decided, by good advice, that the practice is unsaleable, and if the

equipment is of the older variety, it should be offered to the dental dealer on a competitive basis, if desired, and any valueless equipment should be sold as scrap.

If it is decided to attempt to sell the practice, the executives of the local dental association should be advised of the desire to sell. An advertisement should be inserted in the professional dental publications.

In a large city, newspaper advertising could be considered.

The co-operation of the dental dealer in question should be solicited to make use of his contact facilities.

Terms of Sale

It should be remembered that each week of unoccupied practice results in reduced patient adherence, and an offer to purchase, within reason of the evaluation figure, should never be refused, unless there is competitive bidding by prospective purchasers.

The purchaser may offer to place an amount of money down as payment, in part, and to repay the balance either as a percentage of his practice volume or at a monthly rate.

Under some conditions, it may be advisable to have a temporarily available dentist carry on practice in the office in order to maintain it as a going practice until it can be suitably sold or in view of graduation of a dental class in the month of June.

In any case, it is advisable to retain the services of the dental nurse or assistant until the practice has been sold or dissolved, because her services will be considered of prime importance by the prospective purchaser.

These thoughts have been put together as gleanings from the author's experience and observation in many such situations, and because there would appear to be a very real need for sound, objective advice in such difficult and unhappy circumstances.

40 Main St. W.

Dentistry in Europe

Just prior to the Rome Congress last fall, Dr. Don W. Gullett, Secretary of the Canadian Dental Association made visitations to several European countries. He was able, even in a short visit, to develop interesting and factual reports relative to dentistry in these countries. Short visits, however, do not permit complete investigations and consequently Dr. Gullett has entitled this series of reports "Notes on Dentistry in Europe".

The August and September issues considered Dentistry in Norway and Sweden. Dentistry in Denmark and Holland will follow. This issue presents "Dentistry in Finland".

Editor.

Notes on Dentistry in Finland

DON W. GULLETT, D.D.S., Secretary, Canadian Dental Association

Population: 4,200,000

No. of dentists: 1,500

(of which 1,200 or 80% are female)

Ratio to population: 1/2800

SCHOOL DENTAL SERVICE

Finland does not have a public dental service corresponding to such services as established in Norway and Sweden. Dental services for all school children are free. Approximately 20% of these services are rendered in clinics and 80% in private practice. A few dentists, probably not more than fifty, are employed on a full-time salary basis. An unwritten rule exists that members of the profession do not accept a full-time salaried position except when absolutely necessary for the position. Dentists in Finland strongly favour private practice and mean to retain their independence. As a protection measure they do not accept employment in any health scheme for more than half-time (3 hours a day).

The school clinics are arranged on the usual plan—a central clinic with administration, special orthodontic and oral surgery services with branch clinics for operative services. The emphasis on private practice is evident to the visitor. For services rendered children in private

practice dentists are paid on the basis of a fee schedule.

The services are rendered for children ages 7 to 14 or 16. The only service rendered for the first dentition is for relief of pain. It is said that the profession cannot provide the necessary services and it is considered better to do all possible to save the second dentition.

The meaning of the ratio of dentist to population is probably different in Finland than for any other country, owing to the fact that 80% are female. Nearly all are married women. For the most part the single women and widows make full contribution because they have a living to earn. But the married women are generally spasmodic workers and consequently the ratio to population does not mean the same as in a country where the dentists are bread-winners as a whole.

No courses of training exist for auxiliary personnel. Technicians are employed for the most part in laboratories.

DENTAL EDUCATION

Finland has one dental school situated at Helsinki which is known as the Institute of Dentistry. The school building is good consisting of five stories with

floor space on each floor equal to most larger schools on this continent. It was built in 1932. However, it is considered too small and antiquated and it is proposed to build a new larger and more modern school in about two years. The university is tearing down present buildings and gradually building new ones, some part of which are completed and these are both very modern and beautiful in design. The school is well equipped but not new as it is intended to equip the new school with new equipment throughout.

The school forms part of the Faculty of Medicine, University of Helsinki. The financial administration is under the control of the University and derived from the state. University education is free so there are no academic fees. Students do pay a small fee for incidentals and buy some small instruments.

Admission requirements appear rigid and are somewhat difficult to compare with education standards in Canada. The high school course is eight years in length (ages approximately 10 to 18) and is said to include one to two years university work as compared to standards on this continent.

The high school graduate desiring to enter the dental or medical course is required to take an entrance examination in biology, physics and chemistry. In preparation for this examination the University gives what is known as a Selection Course consisting of six weeks' instruction in the subjects named above. From the successful candidates selection of those to be admitted is made by the medical faculty. The Helsinki school ac-

commodates 30 per class.

During the first year of the dental course practical and theoretical studies in biology, physics and chemistry are taken. In the second year anatomy, histology and physiology are taught. Both medical and dental students take these courses together. On the successful completion of these two years the degree of Candidate of Odontology (Cand. Odont.) is awarded.

The student is then enrolled in the dental school where 3 years are spent in completing the course. The teaching day is a long one, from 8 a.m. to 7 p.m. and the curriculum is heavy. Didactic instruction is given in the subjects of general pathology, pharmacology, bacteriology, serology, and internal medicine during the first year as well as lectures in dental orthopaedics and dental materials. Lectures and laboratory courses in operative and prosthetics are also taken.

Lectures and clinical work in operative dentistry, oral surgery, prosthetics, dental orthopaedics and children's dentistry make up the rest of the curriculum. In all, the student spends on the average 5½ years in completing the whole course.

After successfully completing the final examinations, the Licentiate of Odontology (Lic. Odont.) is awarded. Through graduate study the degree of Doctor of Odontology (Dr. Odont.) may be obtained. For all senior teaching positions in the dental school this doctorate degree is compulsory.

Considerable dental research is being conducted at this school, which is the centre for dental research in Finland.

When we build, let us think that we build forever. Let it not be for present delight, nor for present use alone.

Let it be such work that our descendants shall thank us for and let us think as we lay stone on stone that a time is to come when those stones shall be held sacred because our hands have touched them.

And men shall say as they look on the labour and wrought substance of them, "See, this our fathers did."

John Ruskin.

ABSTRACTS

An Evaluation of the Problems of Galvanic Currents in the Oral Cavity

RALPH W. PHILLIPS, M.S.

The presence of small galvanic currents due to similar or dissimilar metals has been well established by laboratory and clinical investigations. The magnitude of these currents is influenced by many variables, and the actual pain induced from galvanic shock is frequent in the average dental practice. The cement base does not insulate the pulp, from this current, and if metallic restorations are used the only satisfactory method of eliminating postoperative pain due to galvanic currents is the placement of an extra-oral varnish on the surface of the restoration.

There is now evidence to indicate that the pain generally subsides rapidly, with in a few days, because of the healing of the cut tooth and thus reduction in the sensitivity. The currents however, remain fairly well stabilized indefinitely.

The role which these currents play in pathological changes in oral, or other tissues probably has been exaggerated. Although there is not adequate evidence to indicate that certain deleterious effects

might not be induced by these currents, it must be remembered that there is also absolutely no evidence showing a correlation between oral and systemic dyscrasia and these currents. The problem probably will remain controversial as long as there are dissimilar metals used in the mouth, but the efforts which would be necessary to resolve the issue would not seem to be worthy of the time and energy required. It is the unqualified opinion of American research workers in pathology and dental materials that these currents do exist but that probably they are deleterious only from the standpoint of possible discomfort to the occasional patient. Until it can be substantiated clearly that there is a correlation between these currents and the many dyscrasia to which they are attributed, it seems logical to assume that such undiagnosed instances are related to more logical, fundamental and established factors.

*Southern California State Dental Assoc. Journal
July 1958.*

A New Agent for Shortening Recovery Time In Oral Surgery

R. O. CHRISTENSEN, D.D.S.

Parenteral Ritalin, a safe new central nervous system stimulant, was employed to hasten postanaesthetic recovery in over 560 patients with extremely good results. With Ritalin, recovery was earlier and better, and there was no relapse of drowsiness. There was also a much more rapid return of muscular coordination and a lessening of the euphoria so common following the use of intravenous barbiturate anaesthesia. In general, patients were up and out of the office within twenty-five to thirty minutes. Except for insomnia in a few cases where higher doses (40 to 50 mg.) were given late in the day, no side effects were encountered.

Ritalin was found to be very effective as a postanaesthetic "awakening" agent, although one or two patients were noted who did not seem to respond to the drug.

Ritalin in the opinion of the authors is an excellent agent for rapid, safe postanaesthetic recovery. Its routine office use is recommended to every oral surgeon. It is an excellent means for reducing staff work load, minimizing the possible hazards of postanaesthetic side effects (drowsiness, headache, depression, etc.), and clearing the office rapidly. The use of Ritalin should prove time saving and economical.

Oral Surgery, Oral Medicine and Oral Pathology
Vol. 11—No. 9—Sept. 1958

Ethics in Dental Practice

DOMINIC BARRESE

Professional ethics go more deeply than a written code, the spirit and not the letter of obligation must be the professional man's guide of conduct. No one should practise dentistry who is not ready to shoulder his obligation willingly or who is not favourably disposed toward the underlying principles of conscientious service and justice. The dentist has obligations to his profession, to other professional men, to the patient, and to the public in general, but these obligations should be undertaken willingly, not grudgingly.

Ethics extend beyond the confines of the dental office and into the community. Every professional man must keep in mind that in his daily practice he contributes to the welfare of his patient, to the service of the public and to the prestige or

standing of the profession. The human element is always present. In this age of specialization it is difficult to find the warmth and friendliness that existed many years ago. We must become cautious about the modern trend towards speed, and must avoid wherever possible the loss of the human touch in patient-dentist relationships. We must bear in mind that there is no short cut to effective human relations.

The future of dentistry will be determined by the needs of the public and not by the needs of the dentists. Dentistry belongs to the public. Unless there is a genuine effort on the part of every dentist, dentistry will not continue to occupy the position and high esteem it now claims.

Journal—American College of Dentists
Vol. 25—No. 2—June 1958

Dimensional Stability of Rubber Base Impressions and Certain Other Factors Affecting Accuracy

R. J. SCHNELL, D.D.S. and R. W. PHILLIPS, M.S.

Five brands of rubber base impression material were studied to determine their dimensional stability on storage and the effect of certain other variables which influence their accuracy. Over 700 impressions were studied using a steel MOD die and a series of four multiple-cavity preparations.

None of the rubber base materials tested was dimensionally stable, and the distortion probably can be associated with continued curing of the material. Distortion however, at any time interval was less than with reversible hydrocolloid. Distortion was not significantly affected by the storage environment. Storage in water should not be employed when a plastic tray or shell is used.

Use of the double mix procedure not only increases the initial accuracy of the impression, but also reduces the distortion during storage. When a band impression is taken with a single mix of material, accuracy decreases as the thickness of the surrounding rubber base is increased.

The bulk of the material is less critical when the double mix technique is employed. Bubbles in the impression are minimized by the use of a syringe and double mix procedure. Uneven distribution of impression material around the tooth increases distortion.

Successive dies may be poured in one impression with no greater distortion than storage of the unpoured impression for a comparable period.

When the brands tested were used properly, little difference was detected in their accuracy. Selection probably will be based on handling characteristics.

For indirect techniques involving single or multiple preparations and short span bridges, the rubber base impression materials are comparable in accuracy to the better reversible hydrocolloids. Long-span or complex bridges were not studied in this investigation, but no reason is known to contraindicate the use of this type of material in such instances.

The Journal of the American Dental Association
Vol. 57 — No. 1 — July 1958

Dyclonine in General Dental Practice

J. HAROLD THOMASON, D.D.S.

Dyclonine hydrochloride is an effective and safe chemical compound having topical anaesthetic and antiseptic properties. Sensitization has been rare, especially when use was limited to the mucous membranes. Cross sensitivity with other anaesthetics has not been reported. Results of Toxicity experiments and clinical reports indicate that reasonable amounts of ab-

sorbed or swallowed material will not cause adverse reactions. Repeated use has not caused irritation of mucous membranes, although dyclonine is somewhat irritating when injected and should not be used for infiltration or block. In vitro studies demonstrate a potent, rapid bactericidal action.

Over a period of 18 months Dental Sol-

ution Dyclonine was applied to the buccal mucous membrane 1,224 times. Before infiltration or nerve block, a cotton pellet saturated with this topical anaesthetic was placed over the area to be injected for 3 minutes. To remove deciduous teeth without injection, a half cotton roll was held over the area or the base was swabbed several times. The dental hygienist swabbed the gingival margin several times before scaling. If an abscess was to be lanced, a saturated cotton roll was placed over the area for 3 to 5 minutes. Gagging was controlled by swishing and gargling a teaspoonful of Dyclone. Results in all these cases were excellent. The length of time during which dyclonine was in contact with the mucous membrane allowed for deep topical anaes-

thesia so that abscesses could be lanced, tartar accumulations removed, or needles inserted without pain to the patient.

The several patients in whom Dyclone was used because of gagging are an example of how topical anaesthesia aids the dentist and saves him time. One man could not tolerate a mouth mirror for examination prior to a mouthwash and gargle with Dyclone. This treatment left his mouth numb for approximately one hour, and was repeated on several occasions without incident so that necessary treatment was completed easily. Two gaggers had Dyclone used to make possible the taking of impressions, and two others were thus enabled to have full mouth X-rays taken readily.

Southern California State Dental Assoc. Journal
July 1958.

Relative Abrasiveness of Natural and Synthetic Toothbrush Bristles on Cementum and Dentine

R. S. MANLY, M.A., Ph.D., Boston and FINN BRUDEVOLD, D.D.S., M.S., Rochester

The abrasiveness for cementum and dentine was studied for hard natural, hard nylon and medium nylon bristle brushes. The abrasive actions of hard natural and hard nylon bristles were identical, when either dentifrice or water was used on the brush. The medium nylon brush was slightly less abrasive than the two hard bristle brushes in both series of tests, but the differences were not statistically significant. The presence of a tooth powder with medium abrasiveness increased the abrasive action of each brush by several hundred-fold.

The result of 96 tests (involving 32 comparisons) showed the mean depth of abrasion for hard natural bristles to be 1.27 ± 0.60 mm. per 100,000 strokes. For hard nylon bristles the abrasion was essentially the same— 1.36 ± 0.71 mm. The mean for the medium nylon bristles was somewhat lower (1.22 ± 0.52 mm.). The standard errors indicate that there are no statistical differences between any of

the groups.

Little or no abrasion resulted when the brushing was done without abrasive. For this reason, the brushing period was increased to 11 hours and the total number of double strokes to 117,500. Of 96 tests of this type, there was no measurable abrasion for the majority of tests. The mean abrasion for the hard natural brush was 0.005 ± 0.013 mm. per 100,000 strokes. For the hard nylon it was 0.006 ± 0.010 mm., and for the medium nylon bristles the mean was 0.001 ± 0.007 mm. These differences were not significant.

These observations indicate that the abrasive action of toothbrush bristles on human dentine is independent of the usual range of stiffness or composition of bristle; it appears to depend almost entirely on the properties of the dentifrice abrasive that is used in association with the toothbrush.

The Journal of the American Dental Association
Vol. 55, No. 6, December 1957

Oral, Facial and Mental Rehabilitation

H. H. PEARSON, D.D.S.

Oral rehabilitation is the science and art of treating people, whose mouths disclose symptoms of disease, destruction and deformities, resulting in physical, biological, and neurological disturbances.

Its purpose is the re-establishment of health, comfort, function, and aesthetics. This is accomplished by the curtailment of disease, trauma, and anatomical abnormalities—the conservation of the healthy remnants of the teeth, soft and bony tissues—and the conversion of the remaining elements to a new compatible, functional and compensatory form.

When in the early twenties, Edmund Kells reminded his audience that "patients are people," he inadvertently set the keynote and motivated a trend towards oral rehabilitation. Today we recognize the need for combining the mechanic and biologic with the psychic approach in order to restore the well-being of the host.

Only when preventive, operative, and restorative dentistry are combined with biologic as well as psychic considerations, shall we be able to render a complete service in this specialty of medicine. We shall no longer be treating depersonalized patients.

The psychosomatic and the somatopsychic interest is the next approach in our function as general practitioners. Abnormalities of dental origin can and do manifest themselves in psychic disturbances, producing a whole scale of mental aberrations. Raginsky reports in his essay on "psychosomatic medicine" that — "any physical disease produces a disturbance in the relationship between the psyche and the soma."

Hans Selye defines "local adaption syndrome" and "general adaptation syndrome" as the manifestations of stress in the whole body as they develop in time. The changes that take place in the tissues

of the mouth and face which are produced by pathologic and psychic trauma are manifestations of a local adaptation syndrome. These changes are caries, periodontal lesions, loss of teeth, and dysfunction.

A general adaptation syndrome develops when these stresses begin to affect the whole body. The trauma produces pain, anorexia, and altered face form. The physical structure of the mouth and related facial tissue is part of the total organism. Its psychic life holds the same relationship to the host as the physical and biochemical life to the rest of the body. It reacts to stimuli and, in turn, stimulates reaction in the whole.

Somatopsychics present an intriguing subject for study, when one realizes that the dental soma being part of the whole does affect and in turn is affected by the psyche.

Hunter called the mouth "the gateway to the body." Its component parts should exist and function as a whole without producing conscious reminders of its presence. It should not contain aberrations that disturb the well-being of the hosts. Oral rehabilitation is concerned with the restoration of the mouth as a whole, not just a hole in the mouth.

Picturing the mind, the behaviour, and the body as three aspects of one central problem, Dr. Wilder Penfield contends that "behaviour and misbehaviour in a certain sense are no more than function and dearrangement of function in the mind and body." That emotional disturbances can actually produce organic abnormalities is an accepted fact in medicine. Oral conditions that are truly psychosomatic include: thumb-sucking, bruxism, fingernail-biting, eyeglass and pencil-biting, lip and cheek-biting. These may manifest themselves in: traumatic occlusion, attrition, periodontal lesions, alter-

ations of facial dimensions and form and temporomandibular disturbances.

We have all had experience with menopausal female patients. Part of their neuroses is a relentless antagonism towards every symbol of aging. This is a form of conversion. When we see them, this antagonism is focused on their mouths. Their manner, their demanding and commanding attitudes invite us to prescribe the minimum and perform this with speed and despatch, or suggest a radical wholesale extraction of all teeth and supply a set of full dentures. They are truly the "underprivileged dental patients." Because their behaviour in the chair disturbs our peace of mind, we close our ears to their demands. They are troublesome patients and because of their neuroses are difficult to manage. So are the three-year-old to ten-year-old children difficult to manage. Menopausal patients generally demand that we retain their teeth and restore the mouth to their concepts and desire for a youthful appearance. They may require oral rehabilitation which can be of a con-

servative nature to tide them over a few critical years. The treatment may be planned to take place over a period of one year or more, dividing the total treatment plan into convenient segments to allow for rest periods of several weeks between treatments. In cases where extensive restorative treatment is temporarily not advised, a program of oral health care should be instituted, one that would remove disease with a view of conserving every element that could be restored to a condition of tissue tolerance and functional service for a period of at least three to five years. Even partial dentures have the double value of function and pretraining for the eventual acceptance of full dentures at some future date if the condition so indicates. These are truly dental patients in whose mouths we may find many manifestations of this condition. For such cases, it is better practice to cure the local symptoms than to convert these into complete somatopsychic manifestations. Full dentures are symbols of old age to most people.

North-West Dentistry
Vol. 37—May, 1958

THE CONVENTION'S CONTRIBUTION TO PROGRESS—Conventions portray their innate possibilities for progress. They evidence the slow, constant growth, development and fruition of the individual and, consequently, the profession. These meetings are giant crucibles in which the elements of our profession from all points of the compass are subject to the fire of close scrutiny. Ideas take shape, individuals grow, together they are the crystallized essence of progress. Nor is progress necessarily confined to developing new ideas and technics. They are but the products of an individual's efforts. Just as every crystalline substance has a characteristic structure, so does the individual.

"Conventions—What For?"
St. Louis Dental Society Bulletin 23:92
September, 1952.

ANNUAL CONVENTION

Canadian Dental Association

QUEEN ELIZABETH HOTEL

MONTREAL, QUEBEC

October 26 - 29, 1958



DR. PIERRE CERNEA

Subject: "Quelle attitude adopter en présence d'une leucoplasia ou d'un lichen plan".

Biography: Dr. Cernea is professor "agrégé" and lecturer in stomatology at the Faculty of Medicine of Paris. He is director of "Actualités Odonto-Stomatologiques" and co-director of the "Encyclopédie Medico-Chirurgicale" — Volume Stomatologie.

DR. WILFRED J. JOHNSTON

Subject: "Endodontics" Panel Presentation.

Biography: Dr. Johnston is associate professor, Department of Endodontics and Dental Pharmacology, Faculty of Dentistry, McGill University; Director of Dental Services of Montreal's Children's Hospital; Director of Plastic Reconstruction, Queen Mary Veteran's Hospital, and Clinical Assistant at the Montreal General.



DR. H. H. PEARSON

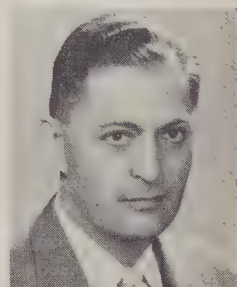
Subject: "Endodontics" — Panel Presentation.

Biography: Dr. Pearson was graduated from the Faculty of Dentistry, McGill University in 1917. He is a past president of the Mount Royal Dental Society and a past Governor of the College of Dental Surgeons, P.Q. He is a co-founder of the Montreal Section of the American Academy of Dental Medicine and the Montreal Alumni Chapter of Alpha Omega Fraternity. He was also co-founder and president of the Montreal Endodontia Society.

DR. HARRY SKURNIK

Subject: "Treatment Planning for Occlusal Rehabilitation."

Biography: Dr. Skurnik is a 1947 graduate of the Faculty of Dentistry, McGill University. He is a member of the Alpha Omega Dental Fraternity, Mount Royal Dental Society, Montreal Endodontia Society, and the American Academy of Dental Medicine. Dr. Skurnik has presented several clinics on various phases of oral rehabilitation.



La Société Dentaire de Montréal will be welcoming you in the most genuine "hospitalité française" and you are invited to register now care of Dr. Chas. A. Durand, C.D.A. 1958 Convention, 758 Sherbrooke St. West, Montreal 2, Quebec.

EDITORIAL

The Mutual Dependency of the Dentist and his Supplier

In 1958, effective—and the word effective is employed in its all encompassing connotation—dental care cannot be rendered without the co-ordination and co-operation of the dental health team—the dentist, the hygienist, the technician, the dental nurse or assistant, and the individual who supplies all these people with the goods and services required in the discharge of their chairside or laboratory functions. Inferior products, and unsatisfactory services can only derogate an essential health profession.

It is axiomatic that there exists a mutual dependency between the dentist and the individual who provides him with materials necessary to perform treatment services. Obviously if no one were rendering dental care there would be no need for dental materials. Conversely the non-availability of equipment and consumable supplies would make the provision of treatment by the dentist impossible. The ethical dignity of the profession, therefore, should be closely allied to those upon whom it depends so heavily for progress and support.

Generally speaking, an understanding relationship exists between the profession and the dental trade. There are, however, occasions when either through a lack of understanding or a failure to communicate this relationship is endangered.

The attitude of the profession toward

the suppliers has long been a matter for conjecture on our part. Various shades of opinion have been expressed by dental students, younger dentists, and practitioners with longer experience. We decided, therefore, to attempt to determine certain beliefs or conjectures held by dentists in respect to their dealers.

Accordingly, we conducted a survey among 240 Ontario dentists, 160 of them from Metropolitan Toronto and 80 from other smaller cities, towns, and villages throughout the province. The response was an astonishing 87% by the date set for tabulation. We received 141 replies from Metropolitan Toronto and 68 returns from other areas in the province, making a total of 209 which approximates ten per cent of Ontario's practising dentists. The graduation years of the respondents spanned a period of 40 years from 1917 to 1957.

Of the respondents, 86% indicated the services of the dental dealers were good and 92% expressed themselves similarly relative to the products sold. The remaining 14% and 8%, respectively, responded 'fair' to these questions. It is significant that, although the choice was available on the questionnaire, not one respondent indicated the services or the products were poor.

The profits of the dealers were the next consideration: 11% had no opinion; 28% felt the profits are excessive; 61%

indicated the profits are reasonable. No one believed the profits are inadequate.

This result immediately engenders some interesting considerations. The American Dental Trade Association produces a codified comparative statement of trade-wide averages as a service to the members. The names of the firms are not given but each company is able to compare its results with others because only its own code number is known to it. The average net profit before Federal taxes was 5.79%. Taxes approximating, as they do, 47%, then created a resulting net profit of slightly more than 3%.

The July issue of *Fortune Magazine* lists the annual figures for the 500 largest industrial corporations in the United States. After Federal taxes the average profit was 5.6% or approximately the same as the dental trade industry before taxes.

We then perused the published annual reports of eight representative Canadian companies—Imperial Oil, B.A. Oil, Moore Business Forms, Tamblyn Drugs, Silverwood Dairies, Agnew Surpass Shoes, Manitoba Sugar, and the Southam Company—and found that their average profit before taxes was 12.5% or more than twice that of the dental supply firms.

In an attempt to determine the increase in prices charged by the dealers for their products we took some 33 of the most used consumable supplies, and compared today's prices with those charged in 1938. We discovered there was an overall percentage increase in cost of 39.6. Attempting, on the same basis, to compare major pieces of better grades of dental equipment, although this is difficult because comparable models have, today, more features, we found that the cost has increased an average of 47%. Now when one realizes that the prices of automobiles, in the same period, have increased by over 250%, houses somewhere between 200 and 300%, and most food items by at least 100%, it would appear that the dental supply in-

dustry is performing a creditable task of keeping prices down.

Apparently an inordinately large number of dentists do not realize that the potential purchasers of dental supplies are relatively few and that the dealers cannot enjoy the greater advantages of high volume potential and therefore high volume sales.

The selling methods of dental dealers were then considered. 89% indicated that they were in keeping with a dignified business relationship. The remaining 11% were divided, almost equally between 'disposed to high pressure' and 'lack initiative'—once more, dramatic evidence of the vagaries of human nature.

Opposed to a manufacturer's representative accompanying the regular salesman on his office calls is 42% of the profession; 14% experiences no specific reaction while the remaining 44% favours the arrangement. Many in this latter group, however, insisted that a definite appointment should be made for the detailing of the product.

How often is it necessary for a salesman to call? Weekly visits are preferred by 43% of Toronto's dentists but only by 4% from the other Ontario areas. Bi-weekly visits received approval from 37% of the respondents from Toronto and 35% of the remainder; 16% of the Toronto replies indicated a predilection for monthly visits while 57% of those from other centres so indicated. The remainder, representing about 3% of the total replying, asked for less frequent calls.

The question was asked of Toronto dentists only whether or not the presently existing two daily delivery system were necessary. While some 58% indicated two daily deliveries were not required, a significant number in this group felt that if the two daily deliveries were discontinued an emergency service should be available. Deliveries become a significant item of overhead when one realizes that in Toronto each delivery by one of the larger supply houses costs approximately

forty-eight cents irrespective of the amount of the purchase.

The dentists were asked if their opinion of dental dealers had altered in any way since graduation. 50% said 'no', obviously the remaining half said 'yes'. 89% of those who indicated that their opinions had changed stated that their regard had been enhanced.

Eighty-five per cent of the respondents emphatically believed that the dental dealers have a responsibility in attempting to eliminate illegal practice. While it is perfectly true that it might be difficult to develop procedures whereby products are sold only to dentists, registered or accredited technicians, or on written orders of the same, it is not difficult for the dealers to co-operate with

the *legally* established authorities in providing positive assistance through the provision of information to assist in the investigation of alleged illegal practice activities.

The dental profession, quite justifiably, should expect quality products and superior services from the dental trade industry. Concomitantly, however, it should realize that the industry has problems and difficulties which, in the main, can be greatly reduced by an understanding and co-operative profession. The mutual dependency of the dentist and the dental dealer will continue to make it possible to provide a high quality of dental service to the public whom it is our privilege to serve.

BOOK REVIEWS

Introduction To Dental Anatomy. Prepared by: J. H. Scott and N. B. B. Symons. Published by: The Macmillan Co. of Canada Ltd. Pages: 344, illustrated. Price: \$7.15.

In the study of any subject the student should not have his course confined to one standard text, as many books are incomplete in some aspects. The student requires the divergent views of the different authors.

In reviewing this text I feel we have a book which should be a requirement for every student of dental anatomy. We have today many books on this subject which fulfill their purposes to a degree but leave many gaps which this book would at least partially seem to close.

The chapters in this book dealing with the development of the face and jaws, tooth movements and growth of the face, have been very well developed in an easily readable, concise and well arranged style.

These chapters are invaluable not only to the

general practitioner, but particularly to the dentist practising the specialties of orthodontics and paedodontics.

The chapters dealing with the development of the dentine, enamel, cementum and other structures are stereotyped but very well developed.

The section dealing with the evolution of the different dentitions and the human dentition in the light of Comparative Dental Anatomy was impressive and should be of interest to every student of dental anatomy.

The diagrams and photographs are well presented and in sufficient number, and the student, therefore, should not have any difficulty in understanding the contents of this book.

As with all text books of this nature, there are always some minor points of disagreement, which should not deter any teacher of Dental Anatomy from including this text as one of the requirements of the course.

J. P. McGuigan.

A Textbook of Oral Pathology. Prepared by: W. G. Shafer, B.S., D.D.S., M.S.; M. K. Hine, D.D.S, M.S., and B. M. Levy, A.B., D.D.S., M.S. Published by: W. B. Saunders Co. Pages: 714-416 illustrations. Price: \$15.00.

The scope of Oral Pathology has as yet no clear-cut boundaries, hence texts on the subject vary widely in their scope. The subject should include not only the more limited field of dental pathology, but also those relevant diseases which may be either systemic in origin, yet having some oral manifestations, or other pathoses that frequent the oro-facial region. The authors have struck a happy balance in this respect.

In presenting the subject matter in the form of paragraphs devoted to aetiology, clinical features, histologic features, etc., the authors have gone a long way towards attaining their

objectives of basing a rational treatment and prognosis on known principles and, at the same time, correlating the didactic and clinical aspects of disease.

For the benefit of students, more emphasis might be placed on the morbidity of individual diseases, as this is frequently a problem for the beginner to appreciate when his clinical experience is still limited. The inclusion of synonyms under the headings of various diseases is, again, helpful to the undergraduate in guiding him in terminology.

A very useful inclusion is the reference table of normal values for any tests used in diagnosis.

The book is printed on glazed paper which permits good reproduction of the excellent illustrations, and the absence of coloured plates in no way detracts from its value. This book is a welcome and worthy addition to our literature.
H. A. Hunter.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

ADDITIONS:

BECKMAN, H.: *Drugs, their nature, action and use.* Philadelphia, Saunders, 1958. 728 p. \$15.00.

BRITISH SOCIETY FOR THE STUDY OF ORTHODONTICS: *Transactions*, 1956. London, Wright, 1958. 198 p.

CAMPBELL, J. M.: *From a trade to a profession; byways in dental history.* Alva, Robert Cunningham and Sons, Ltd. 1958. 254 p.

COOLIDGE, E. D., & HINE, M. K.: *Periodontology.* 3rd ed. Philadelphia, Lea & Febiger. 1958. 440 p. illus. \$8.50.

FINN, S. B.: *Treatment of fractured teeth in children.* (Practical dental monographs, July 1958.) Chicago, Year Book Publishers, 1958. 38 p.

MORLEY, M. E.: *Cleft palate and speech.* 4th ed. Edinburgh, Livingstone, 1958. 271 p. illus. \$4.70.

STATE WATER POLLUTION CONTROL BOARD: *Water quality criteria* (including addendum No. 1). 2nd printing 1957. SWPCB Publication No. 3. Sacramento, California. 512 p. Addendum No. 1, 164 p.

WELLS, C. G., & PHAIR, G. M.: *Speech training for cleft palate children; a teacher-parent guide.* Madison, Wisconsin, Bureau for Handicapped Children. 1957. 51 p. illus.

THE ASSOCIATION

C.D.A. Represented at F.D.I. Meetings

Dr. Don W. Gullett, C.D.A. Secretary, and Brig. E. M. Wansbrough, Director General of Dental Services, Department of National Defence, were the official delegates of the Canadian Dental Association who attended meetings of the Federation Dentaire Internationale in August.

The 46th annual meeting of the F.D.I. took place in Brussels, Belgium, from August 27th to September 2nd. Meetings were held in the Albertine, the new national library with modern equipment for scientific congresses.

Col. Baird to Succeed Brig. Wansbrough

Col. Kenneth M. Baird, OBE, CD, 46, will be promoted to the rank of Brigadier and appointed Director General of Dental Services at National Defence Headquarters in Ottawa. Col. Baird will take over on Nov. 1st, the effective date of Brigadier E. M. Wansbrough's retirement after a career of 44 years.

Born in Ottawa, Col. Baird was educated at Ottawa schools and the University of Toronto and Forsyth Dental Infirmary in Boston. He joined the Canadian Army in 1939 and served in the United Kingdom and Europe. Since the war, he has served in Ottawa, Halifax and Trenton. Col. Baird commanded the R.C.D.C. School from 1947 to 1952, and has most recently been Deputy Director General of Dental Services at Ottawa.

Red Deer, Alberta, Fluoridates Water

Reportedly the first city in Alberta to approve fluoridation by plebiscite and then introduce it is Red Deer, with more than 12,000 population.

Fluoridation of the municipal water supply was started without announcement in June. No complaints were received, and public announcement was made about six weeks after fluoridation began. The feeding machine for the city cost about

\$4,500. The fluoride compound costs about \$20 per month. Regular tests are being conducted to ensure that proper proportions are being added.

The town of Fairview, Alta., also recently began fluoridation to benefit its population of over 1,000.

Cornerstone Laid at Toronto

Premier Frost of Ontario recently laid the cornerstone for the new dental building at University of Toronto. Dean R. G. Ellis hopes to begin the 1959-1960 school year in the new quarters.

Dr. C. T. Bissell, new president of the university, said the dentistry building will give Dean Ellis "the means whereby he can find the kind of solution for his problems that the eminence of his faculty warrants".

Greetings to B.C.D.A. News Bulletin

The British Columbia Dental Association has made a forward step in publishing its new bulletin in printed form. The bulletin was formerly mimeographed. The new format is most creditable and professional in appearance. We congratulate the B.C.D.A. and Editor Munro.

The first issue reported the largest attendance (390 registered dentists) ever attained, at the recent convention of the B.C.D.A.

Now Not Sweet Enough

Canada's confectionery industry apparently believes Canada's sweet tooth is not sweet enough. The industry is reportedly planning a broad program to make Canadians more candy-conscious.

Per capita consumption in this country is 13.6 lb. annually. This is compared with 17.4 lb. in the United States and 28 lb. in the United Kingdom.

Dentists should be encouraged to renew their efforts to make Canadians more candy-conscious but from the dental point of view.

W.H.O. Chief Dental Officer Named

Dr. Bruce Rice, assistant director of the Division of Dental Hygiene of the New Zealand Department of Health, has been appointed chief dental officer in the World Health Organization. He will succeed Dr. Carl L. Sibelius, of Nashville, Tenn., who has held the post in Geneva for the past two years.

1958 Directory

A current record of the complete C.D.A. membership is contained in the latest issue of this Directory. Formerly published biennially, the Directory is now to be issued every year. Copies are available from C.D.A. Headquarters at \$1.00 per copy, while the supply lasts.

A.D.A. Centennial

For its Centennial Meeting in New York on September 14-18, 1959, the

American Dental Association is interested in obtaining motion pictures and scientific exhibits from dentists in the various nations of the world.

Individuals interested in presenting a film or scientific exhibit may obtain an official application blank by writing to the Council on Scientific Session, American Dental Association, 222 East Superior Street, Chicago 11, Illinois, U.S.A.

Films and exhibits from institutions, agencies or commercial firms will be accepted provided they are clearly scientific in nature. No film or exhibit can be accepted which contains advertising or any material which may be construed as serving a commercial purpose. For films not in English, the applicant is asked to provide a summary of the narration in English or to have available someone who can narrate it in English.

CANADIAN DENTAL ASSOCIATION RETIREMENT SAVINGS PLAN

Statement of Unit Valuation as of Aug. 31, 1958

GOVERNMENT BOND FUND

Cash:	\$ 13.23
Investments:	
221 Units—Gov. Bond Fund at \$96.358 per unit.	21,295.12
Interest Accrued to Aug. 21, 1958:	
221 Units—Gov. Bond Fund at \$.37472 per unit.	82.81
TOTAL.....	\$21,391.16
Less: Administration fees— $\frac{1}{8}$ of 1% of \$21,391.16.....	26.74
TOTAL MARKET VALUE.....	<u>\$21,364.42</u>
TOTAL UNITS OUTSTANDING.....	2,131.652
Unit Value as of Aug. 31, 1958.....	\$ 21,364.42
	2,131.652 \$ 10.022

CORPORATE BOND FUND

Cash:.....		\$	179.52
Investments:			
450 Units—Corp. Bond Fund at \$100.109 per unit.....			45,049.05
Interest Accrued to Aug. 31, 1958:			
450 Units—Corp. Bond Fund at \$.44656 per unit.....			295.00
TOTAL.....			\$45,523.57
Less: Administration Fees— $\frac{1}{8}$ of 1% of \$45,523.57.....			56.90
TOTAL MARKET VALUATION.....			<u>\$45,466.67</u>
TOTAL UNITS OUTSTANDING.....	4,451.791		
Unit Value as of Aug. 31, 1958.....		\$45,466.67	
		<u>4,451.791</u>	\$ 10.213

COMMON STOCK FUND

Cash:.....		\$	5.04
Investments:			
7216 Units at \$10.447 per unit.....			75,385.55
TOTAL.....			\$75,390.59
Less: Administration fees— $\frac{1}{8}$ of 1% of \$75,390.59.....			94.24
TOTAL MARKET VALUATION.....			<u>\$75,296.35</u>
TOTAL UNITS OUTSTANDING.....	6,738.979		
Unit Value as of Aug. 31, 1958.....		\$75,296.35	
		<u>6,738.979</u>	\$ 11.173

Trustee: The Royal Trust Company

At the inception of the Plan, the value of each unit was \$10.00. The increase in unit values, as shown above, reflects dividends and interest earned plus changes in values of the investments. Money entering the Plan during the present quarter will purchase units at the new unit values of each of the Funds within the Plan.

Quarterly valuation dates are March 1st, June 1st, September 1st and December 1st each year. It is our intention to publish quarterly statements from the trustee of the Plan in July, October, January and April issues of the Journal.

*Information about the C.D.A. Retirement Savings Plan is available from
Mr. J. T. Staddon, 2249 Yonge Street, Toronto 7, telephone HU. 1-5731.*

THE CORPS

Retirements Announced

Army Headquarters has announced the retirement of two senior officers from the Corps. They are Lt.-Col. L. C. Cameron, C.D., of H.M.C.S. Cornwallis, N.S., and Lt.-Col. C. W. McCrary, C.D., of Montreal, Quebec.

Lt.-Col. Cameron was born in Caribou Gold Mines, N.S. and received his dental education at Dalhousie University, graduating with a D.D.S. degree in 1932. He joined the C.D.C. in November 1939 and served overseas in Italy, Northwest Europe and the United Kingdom from February 1942 to July 1945. He was released from the C.D.C. in February 1946 and was appointed to the R.C.D.C.(R) in October 1947. Since that time Lt.-Col. Cameron has served in Prairie and Eastern Commands. He commences retirement leave in October 1958, and will return to private practice at Windsor Junction, Halifax County, N.S.

Lt.-Col. McCrary is a native of Florence, Ontario and attended the University of Toronto, graduating with a D.D.S. degree in 1926. He enrolled in the C.D.C. in August 1940 and served overseas in Northwest Europe and the United Kingdom from 1942 to 1945. Since the war he has served in Central and Quebec Commands and was Senior Operator at R.C.A.F. Station, St. Jean, Quebec from July, 1953 to September, 1956. In October, 1956 he assumed command of No. 15 Company R.C.D.C. at Montreal and held this appointment until his retirement in August, 1958. Lt.-Col. McCrary will continue to be employed by the Corps as a civilian in London, Ontario.

The Corps wishes these officers every success in civilian life.

Change of Staff at U.N.E.F.

Major H. R. Kettlys, Captain K. N. Munro, and Captain R. G. Perry will complete their tour of duty with the United Nations Emergency Force in the Middle East, and return to Canada in September. Major Kettlys and Captain Perry will be employed in Western Command. They will be replaced in the middle East by Major C. MacDougall, C.D., Captain F. C. Buschlen and Captain J. J. N. Wright.

Major MacDougall was born in Sherbrooke, Quebec. He graduated from Bishop's

College with a B.Sc. in 1942 and from McGill University in 1945 with a D.D.S. degree. He enrolled in the Corps in August, 1945 and served in Central, Western and Prairie Commands until October, 1951 when he was posted to Europe. Since his return to Canada in July, 1954, he has been employed at the R.C.A.F. Station, St. Jean, Quebec.

Captain Buschlen is a native of Arthur, Ontario and is a McGill University graduate, receiving a B.Sc. in 1952 and his D.D.S. in 1957. He was enrolled under R.O.T.P. in 1952 and on graduation in 1957 was promoted to Captain and posted to Central Command. He was employed in London, Ontario until his posting to the Middle East.

Captain Wright was born in Exshaw, Alberta and received his dental education at the University of Alberta, graduating with a D.D.S. degree in 1956. He was enrolled in R.O.T.P. in 1953. On graduation he was promoted to Captain and posted to Western Command, where he has served until his posting to the United Nations Emergency Force.

Captain Kelland Replaces Captain Duggan in France

Captain J. H. Duggan will complete his tour of duty with No. 35 Field Dental Unit in Metz, France and return to Canada in October, 1958 for duty in Eastern Command. He will be replaced in France by Captain A. L. Kelland, who is at present employed at R.C.A.F. Station, Centralia, Ontario.

Major Hughson on Course

Major J. E. Hughson of R.C.A.F. Station, Clinton, Ontario is attending a three month course in Advanced Dentistry at Walter Reed Medical Center in Washington, D.C.

Officers Complete Tour of Duty

The following short service officers have been released from the R.C.D.C.(R), on completion of tour of duty:

Captain D. A. Eisner, Captain J. A. Fleming, Captain H. G. Jorgenson, Captain G. A. Taylor.

THE PROVINCES

BRITISH COLUMBIA

New Dental Headquarters

At the Annual Meeting of the College of Dental Surgeons the members formally approved the construction of a new headquarters building to be located on College property in the 1500 block on Robson Street. This building would replace the present joint office located in the Medical Dental Building which is supported by the College, the British Columbia Dental Association and the Vancouver and District Dental Society.

In preliminary investigations it became apparent that the College would run into some legal difficulties under the Dentistry Act if they were to put up a building in which some of the space is to be rented to outside tenants. Accordingly, acting on the advice of the College's solicitors an incorporated society is being set up to construct the building. This Society is to be known as the Academy of Dentistry.

The British Columbia Dental Association at its annual meeting passed a motion empowering the executive to invest \$10,000 in bonds for the new building and the Vancouver and District Dental Society passed a similar motion authorizing the purchase of \$4,000 worth of bonds. A printed brochure regarding this bond issue will be circulated to all members of the profession by the committee in charge. This offer will be open only to members of the profession in B.C. and presents quite an attractive opportunity for investment.

Prosecutions for Illegal Practice

A total of nine dental technicians have been convicted and sentenced on the charge of unlawfully practising dentistry. The offences were committed in Powell River, North Vancouver, Vancouver, Golden, Kelowna and Vernon.

The evidence brought forward in these cases included examples of extreme pain and physical injury resulting from the illegal practice of the convicted technicians.

The successful prosecutions have been based on complaints of private individuals as well as on information laid by the

College of Dental Surgeons of B.C., which is responsible under the provincial Dentistry Act for protecting the public against illegal practice by unqualified persons. Similar prosecutions will continue as evidence becomes available, according to Dr. Ross Upton, executive secretary.

D. H. M.

MANITOBA

Winnipeg Dental Society

The Winnipeg Dental Society has again lined up an outstanding array of visiting clinicians for its winter program of meetings.

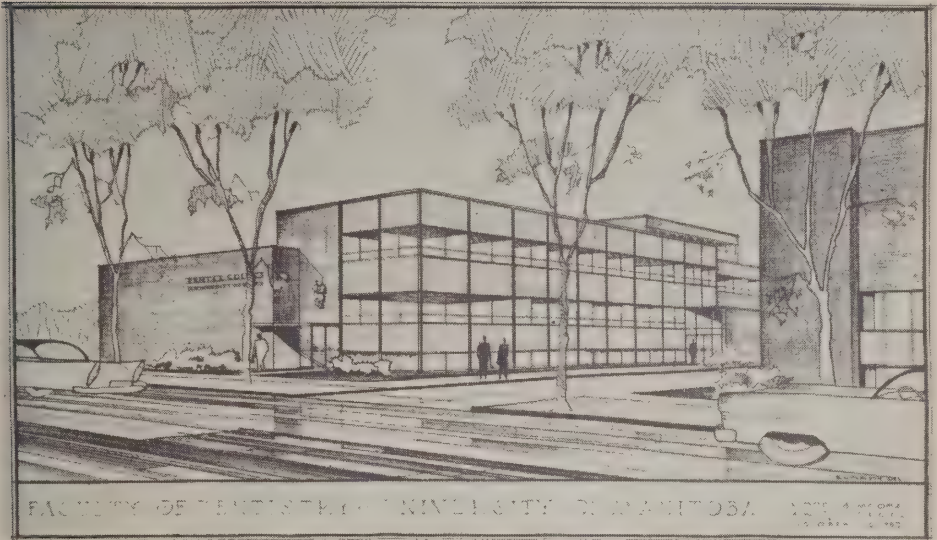
The opening meeting in October will feature Prof. Ralph Phillips from the School of Dentistry, Indiana University, who is a much sought after authority on dental materials. Dr. Phillips was one of the main speakers at the 1957 C.D.A. Convention held in Winnipeg and he so impressed the local men that there was a great demand to have him return and spend more time with us.

The November meeting is a double-header. Dr. J. A. Ludwig will spend the morning on Oral Surgery, and Dr. G. Brass will talk on Modern Operative Procedures in the afternoon.

Dr. Ludwig is a Winnipegger who is one of the relatively few men who have taken both medical and dental degrees. He is at present practising Plastic and Oral Surgery and therefore is exceedingly well qualified to bring the latest surgical techniques to our group.

Dr. George Brass is the head of the operative department at the University of Manitoba Dental School. He has had a great deal of experience as a clinician and will tie in his remarks on operative procedures with those of Dr. Phillips on the materials that are used. Winnipeg is indeed fortunate to have two such authorities in their fields within our own ranks and a very informative day is in store.

The January meeting, as tried so successfully last year, will again be a joint two day convention with the Manitoba Dental Association. The Manitoba Dental Association hopes in this way to attract more men in



from the country to participate in their annual meeting. The combination of social and professional activities was thoroughly enjoyed last year by everyone who attended, and this year's affair promises to be as good or better. An outstanding speaker in Dr. C. O. Boucher of Columbus, Ohio, has been obtained for this meeting. Dr. Boucher is head of the Prosthetic Department at the University of Ohio Dental School, and his topic will be "Full Denture Prostheses". This is a very timely subject due to the interest most rural dentists have in it, and also because of the current illegal laboratory investigation that is being carried on in Manitoba.

In February there will be another Canadian clinician, Dr. W. McIntosh from the dental school at University of Toronto. Dr. McIntosh is well known and well liked by the many men who have graduated from Toronto and it is felt that he will have a great deal to contribute to our Society. His field is Periodontics, a field that is so extremely important in these days of conservation rather than extraction.

The March meeting will bring Dr. John A. Anderson from Chicago to Winnipeg. This promises to be a highlight of the clinical season, as Dr. Anderson will present a new concept on the present day practice of dentistry. Through time and motion studies he illustrates the extreme waste of time and energy in the normal office using normal equipment and assistance, and by the same

medium he shows how these can be eliminated to a great degree. His ideas may well be the blueprints of a coming era in dental practice.

The Home Talent program will again be held in April. The table clinics, discussion groups, and papers presented by members of the Society, have always provided an extremely interesting and worthwhile day.

All in all the clinic chairman for this year Dr. George Danzinger deserves to be congratulated on his well rounded program. Any dentist from outside Manitoba who is interested in attending any of these meetings will be more than welcome.

Further information as to dates and times can be obtained from Dr. Danzinger at 540 Mountain Avenue, Winnipeg.

J. P. B.

First Sod Turned at Winnipeg

Canada's sixth dental school received its formal start in July with official sod-turning ceremony. The dental faculty at University of Manitoba is expected to occupy its \$1,135,000 building by the fall of 1959. The first class in dentistry commenced in September in the medical building.

On hand for the ceremony, along with university officials including Dean J. W. Neilson, were three past presidents of the Canadian Dental Association, Doctors M. H. Garvin, H. J. Merkeley, and K. M. Johnson, and offi-

cials of the Manitoba Dental Association and the Winnipeg Dental Society.

University of Manitoba

The University of Manitoba has announced the first appointments to its part-time academic staff.

Dr. C. D. Rusen (Minn. 1937, Alberta 1938), and Dr. M. J. Snidal (Toronto 1950) have been appointed Demonstrators in Dental Anatomy, while Dr. R. D. Glenn (Toronto 1950) and Dr. R. G. McCarten (Toronto 1943) have been appointed Demonstrators in Prosthodontics. All four appointees are general practitioners in Winnipeg and will be spending a day a week teaching during the first session of the new Faculty which will open September 8th.

ONTARIO

North Toronto Dental Association Reports A Service Project

Last year, one of the members of the North Toronto Dental Association, as part of his B'nai B'rith service work, called on The True Blue and Orange Home to take some of the children to see a hockey game. During the course of the game, he was surprised to find several of the children not eating their popcorn. On asking why they didn't like popcorn, he was surprised to find that the ones not eating thought the treat tasted fine, but couldn't eat it because of "sore teeth".

Further enquiries on the part of this dentist revealed that the children in the Home were mainly from broken homes and therefore not wards of the Children's Aid. Because of that, there was no dental service provided for them, and the Home's budget could allow only "toothache" or emergency treatment. As a result, the general dental condition of the sixty-five children in the Home was most unfavourable.

The North Toronto Dental Association decided to undertake the treatment requirements of the children on a voluntary basis. The officers and matron of the Home promised every co-operation.

One dental supply house very kindly offered an out-dated chair, unit, cabinet and sterilizer, and volunteered to install them at the Home. The widows of two dentists graciously donated the hand instruments and supplies from their late husbands' offices. The Home looked after the plumber's bill for running surface pipes over the

terrazzo floor from the wall to the unit, and the carpenter's bill for making the necessary alterations to accommodate the dental equipment to the room. A few coats of paint on the cabinets, equipment, and walls gave the old equipment a new lease on life, and created pleasant surroundings in which treatment could be given. An air compressor was loaned for the project and an X-ray machine was brought in for two days in order that all mouths received bite wings and whatever other radiograms were considered necessary.

All members of the society were contacted to determine if they would contribute a day's service. The response was excellent. A dentist's appointment book was compiled and letters were mailed to all members notifying them of the time assigned.

A letter presenting helpful information was mailed to each participating member one week in advance. At the end of each month, a formal card of acknowledgement and thanks was mailed to each dentist who gave service during the month.

A paedodontist, who is a member of the Association, developed charts for the children and established a treatment plan. The oral surgeons in the area were contacted and the number of children needing multiple extractions were divided equally among them. For this phase, the children were transported to the surgeons' offices where multiple extractions could be better handled. This was the only part of the project not carried out at the Clinic in the Home.

Of the 65 children examined, 360 teeth needed restoring, 85 teeth needed extraction, and several space maintainers were planned. On the day, two dentists took all the impressions for space maintainers and these models were distributed among offices of the orthodontists where acrylic space maintainers were made.

A member, active in Dental Public Health work, spent an afternoon visiting with the children and staff of the Home, instructing them on oral hygiene and dental preventive measures. Thus it was hoped that once the initial treatment was completed, a minimal amount of work would be needed to keep up with the dental picture in the future.

No report of this project could be considered complete without mentioning the wonderful attitude of the children themselves. The children, who own nothing themselves, and have all felt rejected at some time, actually welcomed such personalized service as having dental treatment, with enthusiasm such as only chil-

dren can show. In almost every case, the child begged to have his teeth 'fixed'—a remarkable contrast to many of the more privileged patients the dentists find in their practices.

The participating members of the North Toronto Dental Association have felt the undertaking of supplying a dental service to these underprivileged children to be a worthwhile and stimulating experience.

B. McCa.

Kingston to Embark on Stannous Fluoride Study

Between 300 and 500 pre-school children in Kingston are taking part in a dental research program which, city health department officials hope, will help determine the effectiveness of stannous fluoride in reducing the incidence of dental caries.

Dr. R. E. Feasby, public health dentist, reported the beginning of the study near the middle of August. The health department has received a grant of over \$500 to purchase the equipment and substance for the research.

All children between the ages of three and five who are free of caries were invited to participate. A school study in 1957 revealed that 52.5 per cent of the children in this age group were free of cavities.

Dr. Feasby expects that it will take a year to complete the topical application and another three years to ascertain the results. To provide as complete protection as possible a child would be required to have his teeth painted with stannous fluoride at the ages of 3, 6, 9, and 12.

Inter-County Dental Society

The largest and most successful golf tournament of the Inter-County Dental Society was held at the Westmount Golf and Country Club, Kitchener, on Thursday, August 28th.

Dentists and representatives from the dental supply houses from Toronto, Hamilton, London, Sarnia, Port Colborne, St. Catharines, and Midland joined the golfers at the local society to make a total of 106 playing golf.

The weather was perfect for golf. The excellent club facilities provided the ideal locale for pre- and post-dinner fellowship.

The Society President, Dr. Lorne Hem-

merich was chairman at the dinner meeting with 113 in attendance. The Inter-County Low Gross trophy was won by Dr. A. Humphries from London.

In addition to this, the Society has a trophy for low gross and low net for society members only. These were won by Dr. Irvin White, Galt, and Dr. Archie Case, Waterloo.

W. A. B.

Dental Alumni Fund

At the last meeting of the Ontario Medical Association the urgency of financial aid to medical students was announced. It was suggested by the medical association that a student loan fund was one answer. We of the Dental Alumni were very pleased to see this interest because at that time our Student Loan Fund had already been accepted by the Board of Governors of the University of Toronto. Donations to the Dental Alumni Fund by members of the association have made this possible. Your continued support will insure a steady flow of higher calibre students to the Faculty of Dentistry. Some of the conditions of the Fund are as follows:

1. Donor: The University of Toronto Dental Alumni Association.

2. Name: This Fund shall be called the University of Toronto Dental Alumni Student Loan Fund.

3. Loans will be made on the basis of students satisfying the Awards Committee of the Faculty of Dentistry of their need and character.

4. Loans are available to students to a maximum of \$300.00 in any one academic year.

5. The total loan outstanding at any time must not exceed \$500.00 to any one student.

6. Interest will be charged at the rate of 3% from the date of graduation.

7. The loan will be repayable at any time, but the repayment period will not exceed two years from the date of graduation.

8. No application will be considered which does not carry a recommendation from the Dean or the Secretary of the Faculty of Dentistry.

You can see that it will be some years before this money starts returning to the association, so now is the time to help. Join your Dental Alumni Association.

E. R.

GENERAL NEWS

A.D.A. Urges Legislation To Control Reckless Dentifrice Advertising Claims

Advertising claims of the nation's major toothpaste manufacturers were described by the A.D.A. July 17 as misleading and detrimental to the public's dental health. In testimony presented before the House of Representatives Subcommittee on Legal and Monetary Affairs, headed by Rep. Blatnik (D., Minn.), Association representatives called upon Congress to enact legislation which would permit federal agencies to control "reckless claims in advertising." Dr. Harry Lyons, of Richmond, dean of the School of Dentistry of the Medical College of Virginia and a former A.D.A. president, said:

Within our own time, we have witnessed promotions of "therapeutic" dentifrices on the alleged merits of peptic digestants, antiseptics, sulfated detergents, wetting agents, urea, ammonium compounds, of fluorine. One after another of these dentifrices has been promoted with unsupported advertising claims of great promise. None has survived the test of time and use . . .

The millions of dollars spent by the public for these products is the least significant of the several considerations related to the unwarranted claims . . . More important are such health factors as a false sense of security about dental caries, periodontal disease, "bad breath" due to diseases of the nose, sinuses, lungs and the gastro-intestinal tract, and serious systemic diseases presenting a variety of oral symptoms.

Dr. Lyons was particularly critical of ads which claimed that once-a-day brushing with a particular toothpaste could substitute for oral hygiene measure long recommended

Some of this advertising goes so far as to imply that "sweets" may be eaten with impunity through the day, provided only that the toothpaste in question has been used just once in the morning before breakfast. This vicious suggestion flies in the face of all that has been done by the health professions to educate the public about hygienic and dietary measures for protecting the teeth against the ravages of decay. There are no short cuts to dental health and to mislead the public in this regard is to work deliberately against the public welfare.

Dr. Ralph E. Creig, of Cleveland, a member of the A.D.A. Council on Legislation, said that the Federal Trade Commission has admitted it is powerless to halt unsupported advertising claims for dentifrices. He added:

The Association believes strongly that existing law and enforcement procedures need strengthening at least insofar as therapeutic claims for dentifrices and drug products are concerned. Where the health of the public is involved, as it is here, the government is completely justified in requiring a high standard of responsibility from industry. At the present that standard is lacking.

The burden of demonstrating the validity of therapeutic claims in advertising belongs, morally, ethically and logically with the party asserting them. The current concept that such claims must be considered to be true and unchallengeable until disproved by the public is fallacious and demonstrably ineffective.

Specific claims for major dentifrices were reviewed one by one by Dr. Sholom Pearlman, of Chicago, assistant secretary of the A.D.A. Council on Dental Therapeutics. Dr. Pearlman said that most advertising for so-called "therapeutic" dentifrices "exaggerated, inflate and otherwise distort the limited scientific findings to the point where the unsophisticated consumer, and even the dentist . . . is grossly misled and flatly deceived". Dr. Pearlman said that "no dentifrice available today has been demonstrated to be of significant value in preventing oral disease." He said that the Association based its opinion on the actual performance of dentifrices in reducing or preventing tooth decay in human beings and not on theoretical experiments. "The brushing is what counts," Dr. Pearlman said as he described dentifrices as "only an aid to the toothbrush."

Two Important Groups Give Support To Fluoridation

Two important organizations, the Ontario Association of Mayors and Reeves and the National Council of Women of Canada, passed resolutions in favour of fluoridation of communal water supplies.

The Association of Mayors and Reeves asked Premier Frost to pass legislation that will permit all municipalities to fluoridate their water supplies. The resolution states,

that in the 11 Ontario Municipalities that fluoridate their water supplies under a special bill, it has been proved that fluoridation will reduce dental decay by at least 65%. "It is undemocratic to refuse municipalities the power to fluoridate their water supplies, if they wish" said Reeve Melvin Swart of Thorold Township. The resolution was passed by an almost unanimous vote.

The National Council of Women urges that each local Council of Women promote the implementation of the fluoridation of the water supplies in every municipality of

Canada. The Council's endorsement is based upon the fact that fluoridation of water has been endorsed by the heads of departments of preventive medicine of 75 universities in the U.S.A. and Canada, as well as the Canadian Dental Association, the Canadian Medical Association, the Canadian Public Health Association, the National Research Council U.S.A., the U.S.A. Public Health Service, the American Dental Association, the American Medical Association, the World Health Organization and the Health League of Canada.

IN MEMORIAM

Frederick Garfield Salisbury—Dr. Frederick Garfield Salisbury, pioneer dentist and one of Western Canada's most colourful sporting figures, died suddenly in Saskatoon, August 31st following a heart attack the previous day. He had been working in his office the day prior to the attack.

Dr. Salisbury was born March 13, 1881, at Greswold, Iowa. He graduated from the Northwestern Dental College, Chicago, in 1903. He first practised dentistry in his home town, then in Boston, when overwork caused a breakdown in his health.

He moved to Saskatchewan seeking an open air vocation and set up farming at Hanley. He later moved into Saskatoon in 1930 and established his dental practice.

"Doc" Salisbury as he was familiarly known to all, had been a director of the Saskatoon Exhibition Board and a member of the racing committee for 16 years. He played a significant role in the development of the Western Race Circuit to its high point in racing quality and prestige held today. He was chairman of the local racing committee for the past 14 years. He was president of the Western Canada Association of Exhibitions in 1949 and President of the Saskatoon Exhibition in 1951 and 1952. Much credit must go to him for the present status of the Western Racing Circuit.

Apart from his interest in his profession and racing, he was a mason—a member of Wa Wa Temple and the Saskatoon Club.

He is survived by his wife, one daughter and two sons.

Ernest Osler Whitmore—Dr. Ernest O. Whitmore, of Victoria, B.C., died suddenly in Edmonton on July 13, at the age of 51. He was born in Wainwright, Alberta and in 1934 graduated from the University of Alberta. He commenced practice in Victoria in 1938.

Dr. Whitmore was an enthusiastic curler and golfer and was a member of the Eagles and Knights of Pythias. He had been in poor health for some time.

He leaves his wife Elsie and three children in Victoria.

Edwin Sims Tait—Dr. Edwin S. Tait of Lake Cowichan, B.C., died in July at the age of 70. He was born in Brantford, Ontario and went while quite young to Victoria. He graduated in 1913 from Northwestern University and commenced practice the same year in Victoria. During World War I he served in the dental corps, after which he returned to Victoria. In 1946 he left for Lake Cowichan where he practised until shortly before his death. He and his brothers were well-known professional men in Victoria.

Survivors are his wife Ellen; two sisters, Mrs. J. G. McPhee, California, and Mrs. W. M. Harris, Sardis, B.C.; a brother, Harold in London, England.

Arthur W. Weldon—Dr. Arthur W. Weldon of Peterborough, Ontario, died suddenly on July 16th, in hospital, he was 75.

Dr. Weldon was born and educated in Lindsay, Ontario, and graduated from the Royal College of Dental Surgeons. He practised on George Street, Peterborough for 33 years before his retirement, 9 years ago.

Dr. Weldon was a member of the Dental Association, the Masonic Order, and the Peterborough Golf and Country Club.

Surviving are his wife Laura, a son, Kenneth, a sister, Etta, and two brothers, Robert and George.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1958	Montreal, Quebec	Oct. 26th - 29th
1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 4th - 7th
1961	Saskatoon, Saskatchewan	June 25th - 28th

1967 Toronto, Ontario
(Centennial Celebration
of Dentistry in Ontario)

FUTURE EVENTS

Date	Function	Location	Officer	Address
Nov. 15, 1958	Annual Meeting—New Brunswick Dental Society	Saint John, N.B.	Dr. E. D. Halford, Secretary	459 DeMonts St., Lancaster, N.B.
Nov. 18-23, 1958	Pan American Dental Congress	Mexico City	Dr. Roberto M. Ruff	Sinaloa No. 9, Mexico 7, D.F., Mexico
Nov. 25-29, 1958	Convention of the Odontological Federation of Dental America—Panama	University of Costa Rica, San Jose, Costa Rica	Dr. R. Pauly, Secretary	Apartado Postal 698, San Jose, Costa Rica
Dec. 8-12, 1958	Greater New York, Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.
Feb. 23-27, 1959	15th Australian Dental Congress	Adelaide, South Australia	The Secretary	15 Grenfell St., Adelaide, South Australia
Mar. 29-30, 31, 1959	Fifth National Dental Congress and I Congresso Interamericano Dental De Cuba	Havana, Cuba	Dr. Claudio F. Cornell	Colegio Estomatologico Nacional, calle L No. 353, Vedado, Havana, Cuba
May 10-13, 1959	Ontario Dental Association Convention	Royal York Hotel, Toronto, Ont.	Mrs. A. Durham, Secretary	234 St. George St., Toronto 5, Ont.
May 31—June 3, 1959	Western Canada Dental Society Convention	Banff Springs Hotel, Banff, Alberta	Dr. C. S. Lea, Secretary	708 Greyhound Bldg., Calgary, Alberta

UNIVERSITY OF ALABAMA Refresher Courses

Oral Surgery for the General Practitioner	December 6, 7, 8, 1958
Preventive Orthodontics	December 13, 14, 15, 1958
The Recognition, Identification and Treatment of Oral Disease	January 10, 11, 12, 1959
High Speed Techniques	January 16, 17, 18, 1959
Periodontology for the General Practitioner	January 24, 25, 26, 1959
Oral Roentgenology	January 30, 31, and February 1, 1959

For further information, please write to the Director, Refresher Course Program, University of Alabama School of Dentistry, 1919 Seventh Avenue South, Birmingham, Alabama.

UNIVERSITY OF MINNESOTA

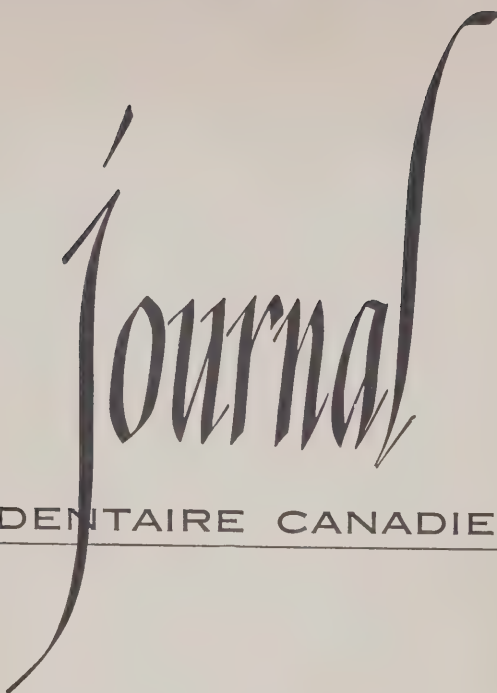
2nd Annual Course in Advanced Oral Pathology—April 20-24th, 1959.

For further information, please write to Dr. Robert J. Gorlin, Chairman Division of Oral Pathology, School of Dentistry, 242 Owre Hall, University of Minnesota, Minneapolis 14, Minnesota.

TEMPLE UNIVERSITY POSTGRADUATE DIVISION

A Participation Course in Clinical Endodontics—October 20-25, 1958 inclusive.

For further information, please write to Postgraduate Division, Temple University School of Dentistry, 3223 North Broad St., Philadelphia 40, Pa.



E L'ASSOCIATION DENTAIRE CANADIENNE

Étude radiologique de l'évolution des sinus cranio-faciaux chez l'homme, par rapport à l'âge, au sexe et au développement de l'appareil masticateur*

par A. S. FAUR, P. Firu et N. Neagu, Bucarest, Roumanie

Les sinus cranio-faciaux sont des cavités pneumatiques creusées dans l'épaisseur des os de la face, qui envoient des prolongements dans les os de la base du crâne et de l'os frontal.

Ils ont ainsi l'aspect de cavités annexes des fosses nasales, ce qui a incité certains auteurs allemands de les appeler cavités annexes du nez (Nebenhohlen der Nase).

Ces sinus entourent les parois orbitaires sur une grande étendue. Bonnet leur accorde même un rôle important pour la protection de l'organe visuel et les appelle "sinus périorbitaires".

Nous les avons appelés sinus cranio-faciaux, car ils sont creusés dans l'épaisseur de la majorité des os faciaux et de certains os du crâne neural et de la base du crâne.

Les sinus cranio-faciaux ont été tout

spécialement étudiés par les anatomistes; l'anthropologie en a donné des études comparatives dans la série animale et dans certaines races humaines, en apportant sa contribution précieuse à l'étude de l'évolution de l'homme et des races humaines.

L'étude comparative des sinus cranio-faciaux dans la série animale a démontré que ces sinus font leur apparition chez les reptiles et chez les oiseaux, sous l'aspect de cavités creusées dans la conque cartilagineuse de la région nasale.

Ils sont généralement couverts par une muqueuse nasale olfactive, qui augmente ainsi la surface sensorielle olfactive.

Chez les crocodiliens, on voit apparaître des sinus, très réduits quant à leur volume et situés dans l'os maxillaire, au-dessus de la racine des dents et dans la conque cartilagineuse nasale, ce qui correspondrait aux cellules éthmoidales des mammifères.

*Travail du Service de Radiologie de la Faculté de Stomatologie et de l'Hôpital Clinique de Stomatologie de Bucarest.

Chez les oiseaux, il existe seulement des sinus orbitaires et on ne voit pas apparaître derrière la conque nasale moyenne les homologues des sinus maxillaires.

Chez les mammifères, les sinus éthmoïdaux et les sinus maxillaires sont constants, à l'exception des pinnipèdes et des cétacés chez lesquels ils manquent.

Les sinus frontaux et les sinus sphénoïdaux apparaissent chez certains mammifères seulement et chez l'homme. Ils présentent alors une extraordinaire variabilité, dans le cadre d'une même espèce.

Chez les canidés, par exemple, les sinus maxillaires sont tapissés d'une muqueuse olfactive.

Chez les bouledogues, les sinus frontaux n'existent pas, malgré leur appartenance aux canidés.

Pour *Weinerth*, les sinus frontaux, tout spécialement, ont une valeur philogénétique et se transmettent par voie d'hérédité; il propose même la création d'un nouveau genre pour les bouledogues, qui n'ont pas de sinus frontaux.

Les proboscidiens ont des sinus énormes; les sinus frontaux ont des prolongements qui s'étendent dans les os pariétaux, tandis que les sinus sphénoïdaux atteignent les condyles occipitaux. Des sinus frontaux tout particulièrement développés sont rencontrés chez les ruminants, chez les bovidés et chez les rhinocéros.

Chez les primates, les sinus cranio-faciaux présentent une grande variabilité.

Les lémuriens ont des sinus complètement pneumatisés. Pourtant, certains comme *Varecia* et *Catus* ne possèdent pas des sinus frontaux véritables, même à l'âge adulte; ceux-ci sont formés par des cavités pneumatiques creusées dans l'os frontal, ne communiquant pas avec les cavités nasales et qui ne sont donc pas tapissées par la muqueuse nasale.

C'est pour cette raison qu'on a émis l'idée de leur créer un genre à part.

Les sinanthropes avaient des sinus frontaux chimpanzoides.

Chez le *Pithecanthropus Javanensis*, la paroi antérieure en était oblique d'arrière en avant et plus petite que la paroi pos-

térieure; leur capacité était plus réduite que celle des sinus frontaux du chimpanzé, qui est plus proche de l'homme, au point de vue évolutif.

Les polygénistes rapprochent le *Pithecanthropus Javanensis* du gorilla ou de l'orang-outan, se basant sur des divers caractères craniens, sans tenir compte de la forme et de l'ouverture des sinus cranio-faciaux dans la fosse nasale.

A juger d'après l'aspect des sinus frontaux, le *Pithecanthropus Javanensis* fait la transition entre les anthropoïdes et l'homme.

Le volume des sinus frontaux est variable même chez les pithécanthropes; le *sinanthropus pekinensis* avait des sinus frontaux plus petits que le *javanensis*.

L'homme de Néanderthal était pourvu de sinus frontaux semblables à ceux du *Pithecanthropus Javanensis*, mais la paroi antérieure en était plus petite que la paroi postérieure; il s'approche donc plus de l'*Homo Sapiens* que du chimpanzé, chez lequel les parois antérieure et postérieure des sinus frontaux sont de grandeur égale et s'éloigne du gorille dont les sinus frontaux ont une paroi antérieure plus grande que la paroi postérieure.

Weinerth combat la conception des polygénistes qui affirment que l'homme de Néanderthal aurait ses origines dans le tronc généalogique du gorille, en se basant uniquement sur la forme des sinus frontaux et sur leur transmission au cours de la philogénèse.

Chez l'homme de Néanderthal, les sinus frontaux varient beaucoup pour ce qui est de leur volume. Le crâne de Karpina D, par exemple, présente un sinus frontal de grandes dimensions, occupant le torus frontal dans presque sa totalité. Il s'étend latéralement à 40 mm du milieu de la glabella et à 6. 8 mm en dedans de la ligne temporale de l'os frontal. En hauteur, le sinus frontal s'étend largement au-dessus du torus.

L'homme d'Aurignac présente des sinus faciaux plus rapprochés, pour ce qui est de leur forme, des sinus faciaux de l'homme actuel.

La variabilité des dimensions des sinus cranio-faciaux est extrêmement grande.

Les polygénistes essayent de démontrer que l'homme d'Aurignac descendrait de l'orang-outang; à juger d'après les crânes bien conservés d'Aurignac, ces fossiles humains doivent être situées entre l'homme de Néanderthal et l'*Homo Sapiens*.

L'*Homo Sapiens* a des sinus frontaux triangulaires, en section sagittale, par la transformation de leur paroi antérieure en une crête osseuse.

Les limites de la variabilité des dimensions des sinus cranio-faciaux, et tout spécialement des sinus frontaux, sont très larges.

Leur aspect général, leur communication avec les fosses nasales sont identiques chez toutes les races humaines et ressemblent à ceux de l'*Homo pithécantropus*, de l'*Homo primigenius* et du chimpanzé.

On rencontre, chez les hommes actuels, une variabilité similaire des sinus cranio-faciaux, identique dans toutes les races, de sorte que la forme, les dimensions et la communication des sinus dans les fosses nasales ne peuvent constituer des critères nettement distinctifs entre les diverses races humaines.

Le rôle des sinus cranio-faciaux et les causes qui ont présidé à leur formation ont été longtemps débattus par les anthropologistes.

D'aucuns pensent que l'apparition et le développement de ces sinus seraient dus à la sécrétion nasale; d'autres les considèrent comme des réservoirs d'air chaud, où l'air froid est chauffé avant de pénétrer dans les poumons, tandis que d'autres pensent que leur apparition serait liée à un processus naturel d'allègement des os du crâne.

Leur formation serait réalisée, pour certains auteurs, par la résorption osseuse progressive qui a lieu à l'intérieur du massif facial et par une apposition lamellaire externe.

La variabilité des dimensions des sinus cranio-faciaux est expliquée par la variabilité de leur vascularisation.

Bonnet pense que les sinus, par suite de l'élasticité de leurs minces parois, joueraient un rôle de protection du contenu orbitaire.

D'autres auteurs considèrent que l'apparition des sinus serait due à l'évagination de la muqueuse olfactive, ce qui augmenterait aussi la surface sensorielle.

Weinerth pense que les sinus cranio-faciaux constituent un phénomène particulier du développement du massif facial et dont l'apparition serait, peut-être, liée à l'action des muscles.

Ces sinus n'apparaîtraient pas par voie fonctionnelle, mais ils se transmettraient par voie héréditaire; c'est pourquoi, les sinus frontaux, tout spécialement, seraient intéressants au point de vue philogénétique.

Stadmüller donne une interprétation fonctionnelle à l'apparition des sinus en affirmant que les sollicitations statiques des divers segments craniens et la sollicitation particulière des os craniens, par les insertions musculaires, mènent souvent à l'apparition de cavités, non sollicitées au point de vue fonctionnel, comme il arrive d'ailleurs aussi dans d'autres régions du squelette.

Torgersen est d'avis que le développement de l'appareil respiratoire influencerait la forme du crâne et des sinus faciaux.

* * *

Dans le cadre des recherches que nous nous sommes proposé d'effectuer sur le développement du crâne humain durant la période de croissance, nous avons suivi à l'aide de l'examen radiographique, le développement des sinus cranio-faciaux à l'âge de 0 à 80 ans, sur soixante crânes appartenant à la Collection de l'Institut d'Anthropologie de Bucarest.

L'examen radiographique nous a permis d'étudier la variabilité des sinus cranio-faciaux, durant le développement ontogénétique, chez l'homme, sans nécessiter la trépanation des crânes; il nous a permis en outre d'étudier la variabilité de ces sinus par rapport à la structure fonctionnelle du crâne viscéral, qui est,

à son tour, étroitement liée au développement de l'appareil masticateur.

Nous avons cru devoir établir pour notre étude trois hypothèses de travail:

1) Les variations des sinus cranio-faciaux au cours du développement ontogénétique chez l'homme.

2) Les variations des sinus cranio-faciaux par rapport au sexe.

3) Les variations des sinus cranio-faciaux par rapport au développement de l'appareil masticateur.

I. Matériel et méthodes de travail

Soixante crânes humains, repartis par rapport à l'âge, au sexe et au degré de développement de l'appareil masticateur ont été radiographiés.

Parmi ces crânes, 34 appartenaient à des sujets âgés de 0 à 18 ans, dans chaque groupe d'âges, se trouvant au moins un crâne féminin et un crâne masculin. Les vingt-six autres crânes avaient appartenu à des adultes ou à des vieillards âgés jusqu'à quatre-vingt ans, de sexe différent et pourvus d'un appareil masticateur et d'une dentition différents.

Chaque crâne a été radiographié en plusieurs incidences: de face, de profil et en incidence axiale.

Nous avons de plus radiographié pour comparaison un crâne de canis familiaris, un crâne de bouledogue, un crâne de cercoptèque et un crâne d'orang-outang.

Les images obtenues ont été interprétées et consignées dans des fiches individuelles, d'après les criteriums suivants:

- a) forme et dimensions des sinus.
- b) forme et degré d'opacité des piliers principaux de pression (naso-frontal, zygomato-alvéolaire).
- c) forme et contour des parois des orbites, de la voûte palatine et du septum nasal.
- d) forme et dimensions des mailles de la spongieuse, au niveau de la base du crâne, de la lame basilaire et de la spongieuse de l'os frontal.

Les constantes radiologiques ont été les suivantes:

distance foyer-plaque: 70 cm
tension du courant effectif: 40 kv
produit milliampères-secondes: 40.

La distance foyer-plaque étant fixe, dans toutes les incidences employées, le facteur d'agrandissement, dû à la divergence du faisceau de rayons est resté

invariablement le même. Les dimensions des sinus ont été établies par comparaison avec les dimensions des orbites.

II. Variabilité des sinus cranio-faciaux au cours du développement ontogénétique chez l'homme.

Les travaux trouvés dans la littérature, dans ce domaine, se résument tout simplement à l'indication de l'âge auquel apparaissent les premiers signes de la formation des sinus.

1) Les images radiologiques des sinus cranio-faciaux apparaissent plus tardivement que les premières évaginations sacciformes de la muqueuse nasale.

Van Gilse différencie les sinus de la capsule nasale des sinus qui apparaissent au niveau des os du crâne. Les sinus de la capsule nasale font leur apparition au cours de la vie intra-utérine déjà et ce sont aussi les premiers qui apparaissent dans la philogénèse; c'est pourquoi on les appelle "paléosinus".

Les sinus des os du crâne apparaissent plus tardivement au cours de l'ontogénèse et ils sont connus sous le nom de "néosinus".

Les paléosinus restent séparés des néosinus par un tissu conjonctif dense, pendant une certaine période de temps.

Seuls les néosinus feront l'objet de notre étude, qui s'adresse uniquement à des crânes radiographiés.

Apparition des sinus cranio-faciaux

a) *Les cellules éthmoïdales* sont les premières cavités osseuses qui apparaissent sur les clichés des crânes des nouveau-nés.

Ce sont d'ailleurs les premières cavités cranio-faciales qui apparaissent dans la "série animale".

Les premières évaginations de la muqueuse nasale apparaissent plutôt durant la vie intra-utérine.

(fig. 1)

b) *Les sinus maxillaires* n'apparaissent sur l'image radiographique qu'à l'âge de seize mois, (crâne c.39, fig. 2) dans l'angle inféro-interne de l'orbite, entre les cellules éthmoïdales antérieures et la canal sous-orbitaire. L'évagination de la muqueuse



FIG. 1. Crâne C5. Nouveau-né (incidence axiale). Les cellules ethmoïdales sont complètement pneumatisées. 1) cellules ethmoïdales; 2) capsule auditive; 3) trou occipital.

nasale du méat moyen, destinée à tapisser le sinus maxillaire, apparaît plutôt, durant le sixième mois de la vie intra-utérine.

c) *Le sinus frontal* apparaît sur l'image radiologique seulement à l'âge de sept ans (crâne I 68, fig. 3), au-dessus du point *maxillo-frontal*, sous la forme d'une cellule avoïdale, dont le plus grand diamètre, mesuré sur le cliché, est de 6 mm. La spongieuse qui se trouve à l'intérieur de cette cavité n'est pas complètement résorbée et il s'ensuit que la cellule frontale n'est pas complètement pneumatisée. Elle n'est non plus entièrement recouverte par la muqueuse nasale, à cet âge.

Les premières évaginations de la muqueuse nasale vers la région frontale apparaissent beaucoup plus tôt, immé-

diatement après la naissance, dans une proportion de 95% (Grünwald, cité par Peter Karl).

d) *Le sinus sphénoïdal* apparaît sur l'image radiologique vers l'âge de douze ans (crâne c.129, fig. 4), sous l'aspect d'une zone de résorption située dans la portion antérieure du presphénoïde.

A l'âge de huit à neuf ans (crâne c.102, fig. 5) on n'observe pas encore l'apparitions des sinus sphénoïdaux; on peut pourtant constater la présence de leur contour, tandis que les mailles de la spongieuse, délimitée par ce contour, sont plus grandes et en voie de résorption.

Les premières évaginations de la muqueuse nasale vers cette région apparaissent beaucoup plus tôt à l'âge de deux ans environ; ces évaginations muqueuses font leur apparition au niveau des cornes de Bertin, et après l'âge de dix ans se dirigent vers le corps du sphénoïde.

Développement des sinus crânio-faciaux après leur apparition.

Dans la littérature, la présentation du développement des sinus cranio-faciaux, après leur apparition, fait l'objet d'une étude plutôt sommaire.

La majorité des auteurs relatent que

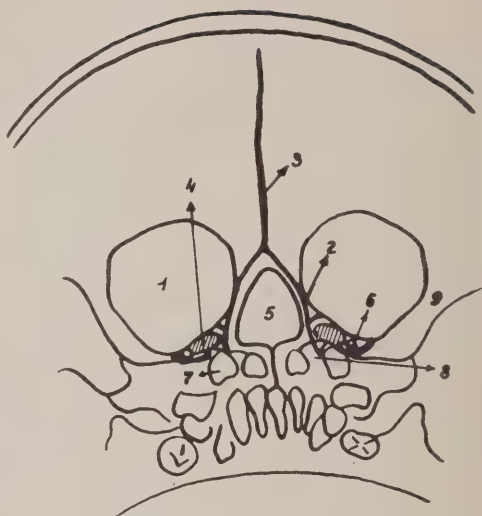
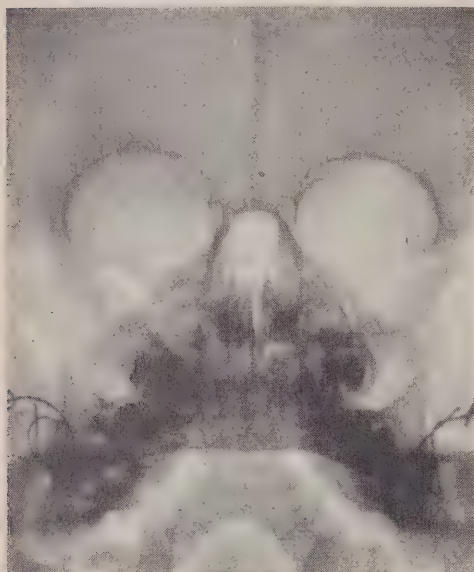


Fig. 2. Crâne C. 39. sexe masculin; âge 1, 4 ans.

La cellule orbitaire du sinus maxillaire vient de faire son apparition; elle mesure 1 cm. en longueur et 0, 3 cm. en largeur. Les dimensions de l'orbite en hauteur et en largeur sont de 2, 3 cm. 1) orbite; 2) dérivation nasale (interne); 3) pilier frontal; 4) sinus maxillaire; 5) fosse nasale; 6) trou sous-orbitaire; 7) canine temporaire; 8) pilier naso-frontal, dérivation, orbitaire (interne).

ces sinus se développeraient "peu à peu, comme un ballon qui se gonfle", les parois osseuses "se modelant sur la muqueuse évaginée."

Nous avons constaté, en examinant les images radiographiques des crânes étudiés par nous, que les sinus maxillaires, les sinus frontaux et même les sinus sphénoïdaux se développent en trois phases, chaque phase correspondant à un certain moment du développement de l'organisme, pris dans sa totalité.

On voit tout d'abord apparaître le contour de la future cavité sinusale, ce contour étant représenté par une ligne fine de condensation osseuse.

Ensuite, on constate l'agrandissement progressif des mailles de la spongieuse, suivi de la disparition par résorption de la spongieuse, dans les limites fixées par la ligne de condensation osseuse, apparue la première, qui marque le contour du futur sinus et de la paroi qui la sépare de la cavité nasale; ceci a pour conséquence l'apparition d'une image uniforme de la cavité sinusale. Cette phase correspond à la période à laquelle la muqueuse nasale évaginée tapisse entièrement la cavité osseuse néoformée.

C'est donc ainsi qu'apparaissent les premières cavités sinusales; leur développement n'a pas lieu "peu à peu", mais il est marqué par trois phases de développement, par l'annexion de nouvelles cellules où l'on remarque de même tout d'abord le dessin du contour, ensuite l'agrandissement des mailles de la spongieuse dans les limites de ce contour et de la paroi qui la sépare de la cavité nasale, suivi de l'annexion à l'ancienne cellule sinusale, pneumatisée antérieurement.

Les parois qui séparent les cellules néoformées ne se résorbent pas entièrement, mais, le plus souvent, se conservent partiellement et forment des septums falci-formes. Le nombre de ces septums indique approximativement le nombre des cellules sinusales apparues au cours des diverses étapes du développement et annexées à la première cellule sinusale apparue.

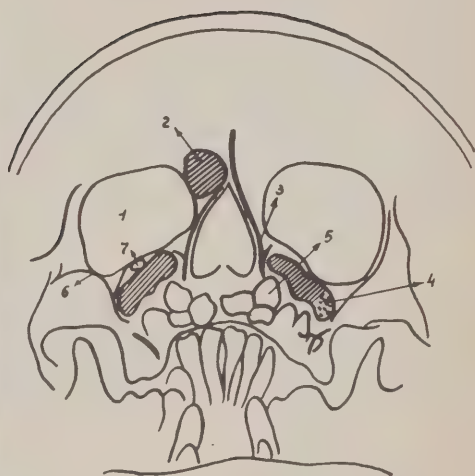
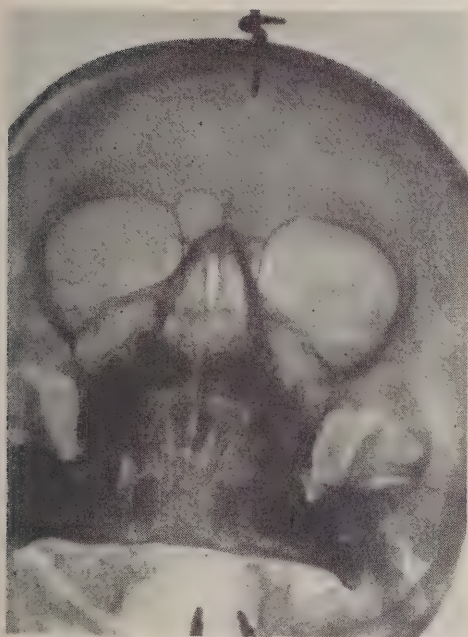


FIG. 3. Crâne / 68, sexe féminin, 7-8 ans.
La cellule maxillo-frontale vient de faire son apparition.

1) orbite; 2) cellule frontale; 3) pilier naso-frontal;
4) sinus maxillaire; 5) canine permanente; 6) pilier
zygomato—alvéolaire qui commence à se profiler;
7) trou sous-orbitaire.

a) Les cellules éthmoïdales, présentes et pneumatisées déjà à la naissance, prennent un grand développement par la formation de nouvelles cellules, à l'âge de 6 à 7 ans.

b) Les sinus maxillaires se développent en trois phases:

A l'âge de 1 à 4 ans (crâne c. 39, fig. 2) apparaît la première cellule sinusale au niveau de l'angle inféro-interne de l'orbite, entre les cellules éthmoïdales antérieures et le trou sous-orbitaire.

Nous avons appelé cette cellule, la cellule orbitaire du sinus maxillaire.

Cette cellule a une forme ovale; son axe, long de 1 cm., est parallèle au rebord orbitaire inférieur et sa hauteur est de 3 mm. A titre de comparaison, nous dirons que les axes orbitaires du même crâne, mesurés sur le cliché radiographique, ont une longueur de 2.8 cm chacun.

A l'âge de quatre à cinq ans, on voit se profiler une autre cellule sinusale, ovale, située au-dessous du canal sous-orbitaire et occupant, en grande partie, le corps du maxillaire supérieur. Nous avons appelé cette cellule, la cellule sous-orbitaire du sinus maxillaire.

A l'âge de six à sept ans (crâne C.81, fig. 6), cette nouvelle cellule se développe davantage, le processus de résorption et de pneumatisation étant ainsi achevé.

La forme du sinus maxillaire, au cours de cette deuxième phase, est en bissac étranglé au niveau du trou sous-orbitaire.

Le diamètre transversal du sinus maxillaire atteint 15 mm en moyenne, ses variations extrêmes étant de 14 mm à 19 mm.

Le pilier zygomato-alvéolaire est bien représenté à cet âge. Il délimite, en arrière, cette nouvelle cellule.

A l'âge de douze ans (crâne C.129, fig. 7), apparaît le contour d'une troisième cellule sinusale, dans la portion inféro-externe, derrière le pilier zygomato-alvéolaire. Nous avons appelé cette cellule, cellule rétro-zygomato-alvéolaire du sinus maxillaire. Le diamètre maximum du sinus maxillaire s'accroît encore de 1 cm, et atteint la valeur moyenne de 2.5 cm, ses valeurs extrêmes variant de 2.2 cm à 2.7 cm, comme chez l'adulte.

Les cellules sous-orbitaire et zygomato-alvéolaire sont séparées par un septum,

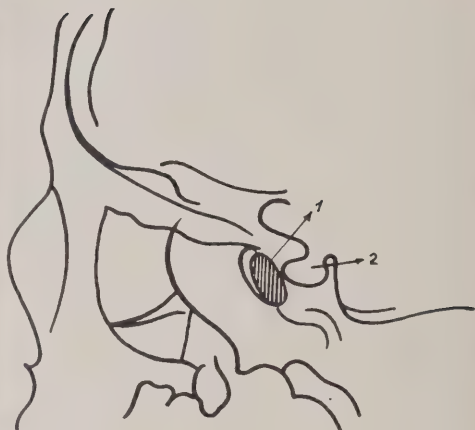
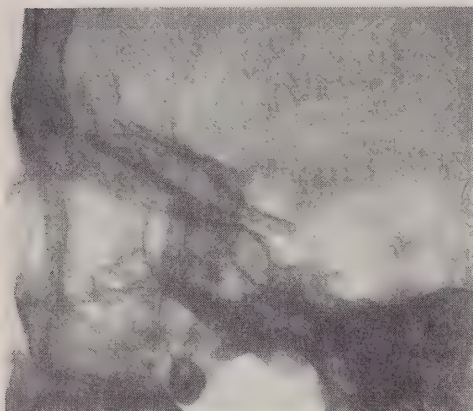


FIG. 4. Crâne C 129, sexe masculin, 12 ans (profil).
On voit apparaître le contour uniforme du sinus sphénoïdal.

1) Sinus sphénoïdal; 2) selle turcique.

incomplètement résorbé à cet âge; à l'âge de dix-huit ans, ce septum est presque complètement résorbé et il est habituellement remplacé, par suite de cette résorption incomplète, par un septum falciforme, qu'on rencontre chez la plupart des sujets adultes.

c) *Les sinus frontaux* se développent en trois étapes.

La première cellule frontale apparaît autour de l'âge de sept ans (crâne I, 68 fig. 3), au-dessus du point *maxillo-frontal*. Nous avons appelé cette cellule: cellule maxillo-frontale du sinus frontal.

Cette cellule a une forme ovale, son diamètre vertical mesurant 6 mm et son diamètre horizontal 4 mm.

La pneumatisation complète de cette cellule, c'est-à-dire la résorption de la

spongieuse à l'intérieur de la ligne de condensation osseuse qui marque les futures limites du sinus, ainsi que son recouvrement par la muqueuse nasale, se produit un peu plus tard, vers l'âge de huit à neuf ans.

A remarquer que durant cette période de formation de la cellule frontale, le contour de l'arcade orbitaire s'efface progressivement au niveau de la zone de formation de la cavité sinusale.

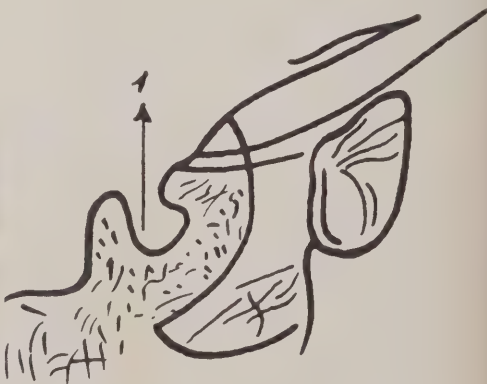
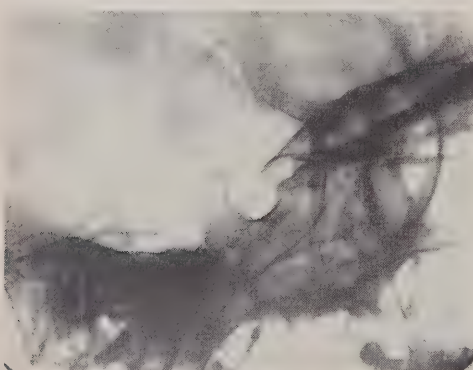


FIG. 5. Crâne C.102., 8-9 ans. (profil).
On n'observe pas l'apparition des sinus sphénoïdaux.

1) selle turcique.



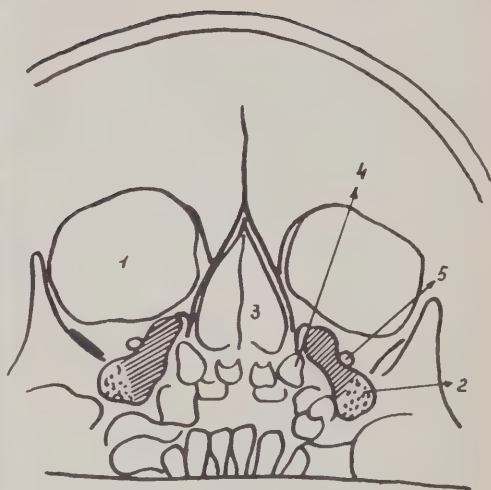


FIG. 6. Crâne C.81. 6-7 ans.

Le sinus maxillaire a une forme en bissac. Les deux premières cellules sinusales ont fait leur apparition. 1) orbite; 2) sinus maxillaire; 3) fosse nasale; 4) canine permanente; 5) trou sous-orbitaire.

Vers l'âge de douze ans, on voit se former une seconde cellule frontale qui se développe dans l'épaisseur de l'arcade supra-orbitaire, en face de la glabelle et en dedans du trou supra-orbitaire.

Nous avons appelé cette nouvelle cellule: *cellule glabellaire* du sinus frontal. Cette cellule fusionne avec la première cellule apparue par la résorption du septum de séparation; le sinus frontal, ainsi agrandi, prend une forme en bissac ou en coeur. On observe, à partir de ce moment, que le contour des parois orbitaires, dans la région de cette nouvelle cellule, devient plus effacé.

Le troisième temps de développement du sinus frontal se caractérise par son agrandissement en hauteur et en dehors et ceci a lieu par suite de l'annexion de plusieurs cellules qui se développent dans l'arcade supra-orbitaire, en dehors du trou supra-orbitaire.

Nous avons appelé ces cellules: cellules supra-orbitaires du sinus frontal (crâne R.2106, fig. 8). Cette phase du développement peut manquer ou n'être qu'esquissée, chez certains sujets; chez d'autres,

pourvus d'un puissant appareil masticateur et d'une forte arcade supra-orbitaire, le sinus frontal acquiert un important développement transversal et s'étend dans la proximité de l'apophyse orbitaire externe. Les cellules supra-orbitaires sont particulièrement développées chez le *Pithécanthropus Javanensis*, l'homme de Néanderthal (crâne Krapina D) et chez le gorille.

Le contour du sinus dans cette zone est polycyclique, convexe en haut ou en dehors; les renflements indiquent approximativement le nombre des cellules frontales qui ont participé à la formation du sinus.

d) Les sinus sphénoïdaux se développent également en trois phases.

A l'âge de douze à quatorze ans (crâne C.147, fig. 9), leur contour apparaît nettement dans la partie la plus antérieure du corps de l'os sphénoïde.

Sur les clichés pris en incidence axiale, leur contour a un aspect cupuliforme, tandis que sur les radiographies de profil, leur aspect est réniforme. La résorption de la spongieuse à l'intérieur de ce contour est assez avancée à cet âge.

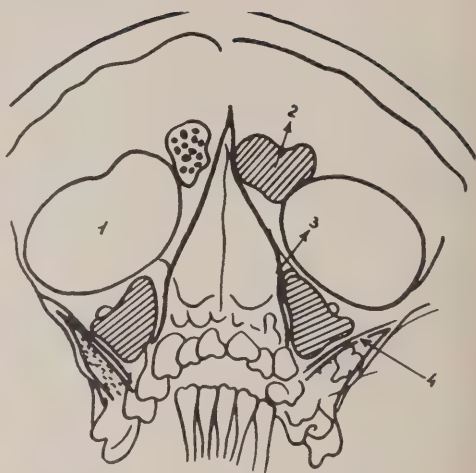


Fig. 7. Crâne C.129. 12 ans.

La seconde cellule frontale a fait son apparition. La cellule frontale droite n'est pas encore pneumatisée. 1) orbite; 2) sinus frontal (cellule gauche); 3) pilier naso-frontal; 4) pilier zygomato-alvéolaire.

Après l'âge de dix-huit ans, le sinus sphénoïdal est complètement pneumatisé et occupe le corps du sphénoïde, en face de la moitié antérieure de la selle turcique, en épousant une forme ovale (crâne R.10, fig. 10).

La troisième étape du développement du sinus sphénoïdal débute parfois par l'apparition de nouvelles cellules, qui se développent dans tout le corps du sphénoïde, intéressant par conséquent la spongieuse au-dessous de l'extrémité postérieure de la selle turcique (crâne R.2106, fig. 11) et envoyant même des prolongements dans la lame basilaire.

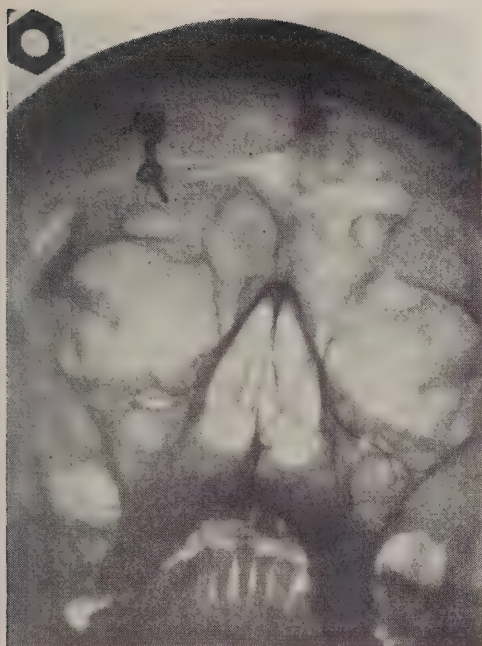
On remarque pendant le développement des sinus cranio-faciaux l'existence de certains moments critiques qui coïncident avec toute une série de transformations importantes dans le développement de l'organisme humain en général, ainsi qu'avec le développement des maxillaires et le développement des piliers de pression et de la dentition en particulier.

À l'âge de 1 à 4 ans, la première cellule du maxillaire, la cellule orbitaire, fait son apparition. À cet âge, le pilier naso-frontal est bien représenté. Il part de la

région de la canine temporaire, qui se trouve déjà évoluée sur l'arcade dentaire et se bifurque rapidement en un pilier interne (nasal) et un pilier externe (orbitaire); entre ces branches de bifurcation, on voit le trou sous-orbitaire et l'orbite, uniformément contournés.

Durant la période comprise entre l'âge de cinq à sept ans, les cellules éthmoïdales prennent un grand développement. On constate l'apparition de la première cellule frontale (cellule maxillo-frontale) et de la seconde cellule du sinus maxillaire (cellule sous-orbitaire). À cet âge, on remarque aussi le développement, tout particulièrement important, des glandes, des gonades et de la musculature. La courbe de croissance du cerveau se réduit à cet âge où l'on remarque de développement en hauteur et en largeur de la face.

C'est toujours à cet âge qu'apparaissent les molaires de six ans et les incisives de la série permanente, l'articulation dentaire se stabilise, les condyles mandibulaires commencent le modelage de leurs deux versants; les piliers zygomatiques se développent et dépassent en épaisseur les piliers naso-frontaux.



Les orbites augmentent leur diamètre transversal, les reliefs faciaux font leur apparition.

La musculature de l'appareil masticateur se développe en même temps que le reste de la musculature du corps, ainsi que par le déplacement des points d'insertion musculaire, tant originelles que terminales, consécutif au développement du crâne facial en hauteur et en largeur.

Les images radiologiques des sinus maxillaires du cercopithèque à l'orang-outang correspondent à l'âge dentaire humain de trois ans.

Suivant les dates fournies par Schultz, le cercopithèque étudié avait l'âge de 1, 6 ans et l'orang-outang l'âge de deux ans.

La première cellule du sinus maxillaire apparaît tant chez le cercopithèque, que chez l'orang-outang, toujours dans l'angle inféro-interne de l'orbite et en dedans du trou sous-orbitaire (fig. 12); le pilier nasofrontal est bien représenté et entre ses branches de bifurcation se situent toujours le trou sous-orbitaire et l'orbite, à contour uniforme.

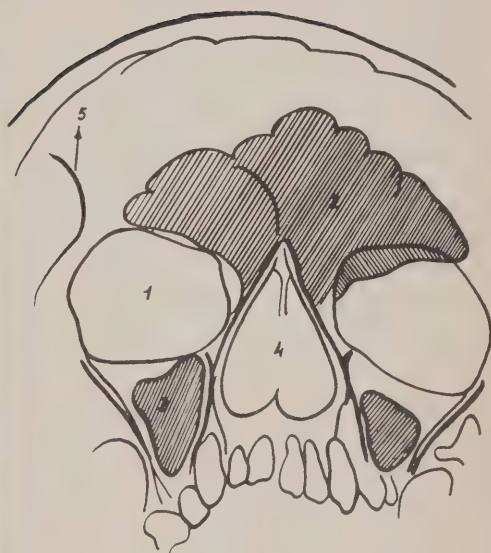


Fig. 8. Crâne 2106, sexe masculin.

Les sinus frontaux sont très développés transversalement. Appareil masticateur puissamment développé. 1) orbite; 2) sinus frontal; 3) sinus maxillaire; 4) fosse nasale; 5) crête temporale de l'os frontal.

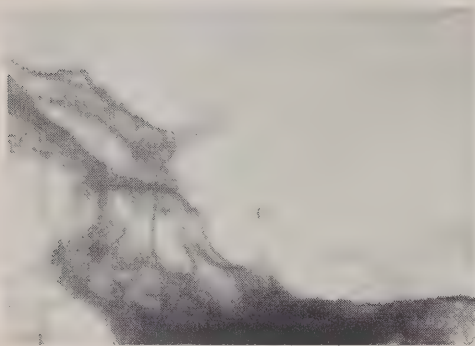
La seconde cellule du sinus maxillaire est contournée chez l'orang-outang et on voit même le commencement du processus de résorption de la spongieuse à son intérieur.

L'époque du développement des sinus maxillaires chez le cercopithèque et chez l'orang-outang correspond au développement des maxillaires, des piliers de pression et de la denture chez l'homme, malgré la différence des âges chronologiques, l'âge humain étant plus avancé après l'éruption dentaire.

L'âge d'environ douze ans constitue un autre moment critique dans le développement de l'organisme humain.

C'est autour de cet âge que commence le développement de la prépuberté et apparaissent les secondes molaires permanentes, la face continue son développement en hauteur, en largeur et en profondeur, dans un rythme accéléré.

La force de contraction des muscles masticateurs s'accroît, les reliefs de la face se dessinent mieux, les piliers zygo-



mato-alvéolaires, ptérygoidiens, le système de la trajectoire dentaire et temporo-mandibulaires se développent d'une manière toute particulière.

Des modifications importantes apparaissent au niveau de l'appareil masticateur (changement du timbre de la voix, changement du type respiratoire).

A cet âge, se développe la troisième cellule du sinus maxillaire (rétro-zygomato-alvéolaire), se développe la seconde cellule du sinus frontal (glabélaire) et se pneumatise la première cellule du sinus sphénoïdal (fig. 13).

Après l'âge de dix-huit ans, la croissance de l'organisme, en général et du cerveau, en particulier, se réduit visiblement, la variabilité dimensionnelle du crâne augmente, le développement des piliers de pression du crâne facial, de l'orbite, des condyles mandibulaires, du crâne en général, a atteint le développement rencontré chez l'adulte.

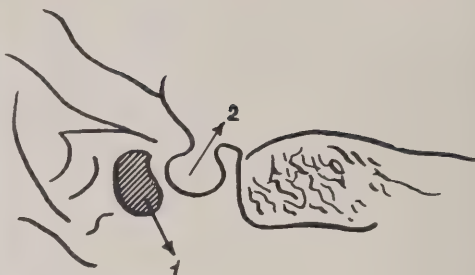
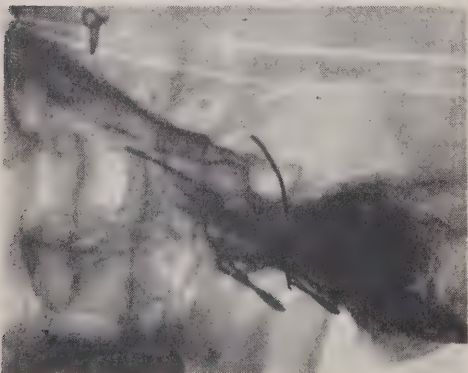


Fig. 9. Crâne C.147, sexe masculin, 14 ans (profil). Les sinus sphénoïdaux ont un aspect réniforme. 1) Sinus sphénoïdaux; 2) selle turcique.

A cet âge, se ferme la suture sphéno-occipitale, se développent parfois les cellules frontales supra-orbitaires, se développe le sinus sphénoïdal, ce dernier intéressant le corps du sphénoïde en face de la moitié antérieure de la selle turcique.

Il est possible donc de conclure, de tous ces faits, que l'apparition et le développement des sinus cranio-faciaux ne constituent pas des phénomènes isolés, mais bien au contraire, on peut en déduire que ces sinus sont des formations anatomiques, dont l'évolution suit certaines phases du développement général de l'organisme.



FIG. 10. Crâne R.10. Sexe masculin, 25 ans (profil). 1) Sinus maxillaire. 2) Sinus frontal; 3) Sinus sphénoïdal.

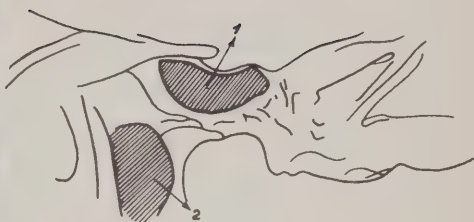
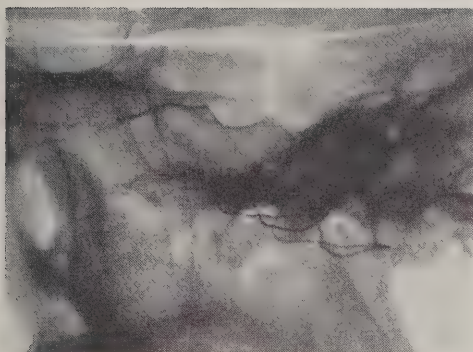


FIG. 11. Crâne R. 2106, 33 ans (profil).
Le sinus sphénoïdal dépasse, en arrière, la moitié
antérieure de la selle turcique.
1) Sinus sphénoïdal; 2) Sinus maxillaire.

On ne peut évidemment ne pas tenir compte du rôle joué dans ces processus par les glandes endocrines et par le système nerveux, qui dirigent toutes ces phases de développement. On sait d'ailleurs que certains troubles neuro-endocriniens peuvent avoir pour conséquence le retardement de l'apparition et du développement des sinus cranio-faciaux. Après l'âge de dix-huit ans et jusqu'à quatre-vingt ans, les sinus cranio-faciaux présentent une grande variabilité de leurs dimensions, variabilité qui peut être appréciée sur les images radiologiques, en tenant compte des repères déjà décrits, soit le trou sous-orbitaire, le pilier zygomatique, le trou supra-orbitaire, la selle turcique, etc.

3. Le développement des sinus cranio-faciaux se fait généralement de façon symétrique. L'asymétrie est plus évidente au niveau des sinus frontaux, chez lesquels la variabilité des dimensions sinu-sales est elle-même plus grande, tant au cours de la philogénèse que dans le cadre de la même espèce.

L'étude radiologique des sinus cranio-faciaux sur des crânes d'enfants et d'adolescents, en plein développement, âgés de 0 à 18 ans, nous a permis de déduire ce qui suit:

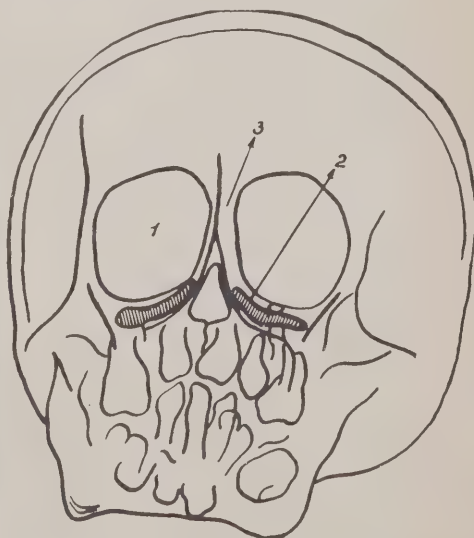
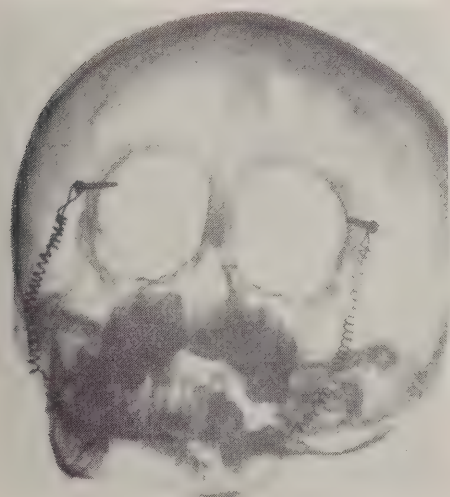


FIG. 12. Crâne d'orang-outan, 2 ans.
1) orbite; 2) Sinus maxillaire; 3) pilier naso-frontal.



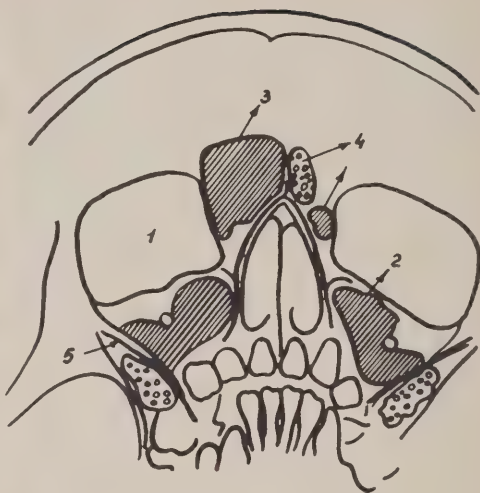
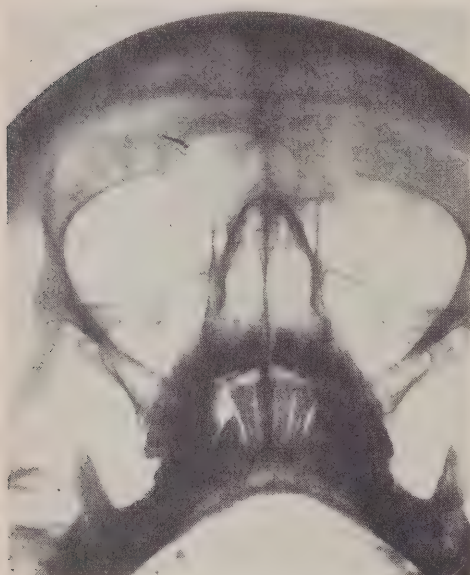


FIG. 13. Crâne C.121, sexe masculin, 11 ans.
La troisième cellule du sinus maxillaire fait son apparition. 1) orbite; 2) sinus maxillaire; 3) sinus frontal; 4) cellule glabellaire, cellule maxilo-frontale; 5) pilier zygomato-alvéolaire.

a) L'image radiologique des premières cavités sinusales apparaît à un certain âge, dans un certain endroit, ayant une certaine forme et certaines dimensions.

Basés sur ces trois éléments: la forme, le lieu d'apparition et les dimensions des cavités sinusales, on peut déduire l'âge du sujet et apprécier les éventuels troubles du développement du crâne.

b) Au cours du développement de chaque sinus, nous avons remarqué tout d'abord l'apparition du contour de la future cavité sinusale, ensuite l'agrandissement des mailles de la spongieuse à l'intérieur de ces limites et, enfin, la résorption de cette spongieuse et l'apparition de la cavité sinusale.

Les sinus apparaissent donc, au début, comme des cavités closes, qui ne communiquent pas avec la cavité nasale.

Cette phase du développement des sinus est rencontrée au cours de la phylogenèse.

Varecia et catus parmi les lémuriens, les nicticébidés, parmi les platirines, ont des sinus frontaux "fermés" qui ne communiquent pas avec la cavité nasale et ne sont donc pas tapissés par la muqueuse nasale.

Ultérieurement, la paroi qui sépare la cavité sinusale de la cavité nasale, se résorbe à son tour et la muqueuse nasale,

évacuée auparavant au devant de cette région, s'hyperplasia et tapisse les parois de la cavité osseuse.

c) Le développement des sinus maxillaires, frontaux et sphénoïdaux, a lieu en trois phases principales, par rapport aux différents repères anatomiques qui les environnent.

Basés sur ces repères, il est possible d'apprécier les dimensions des sinus cranio-faciaux sur l'image radiologique.

d) Les phases du développement des sinus cranio-faciaux correspondent à toute une série d'importantes transformations dans le développement de l'organisme en général et le développement des maxillaires, des muscles masticateurs, de la dentition et des piliers de pression faciaux, en particulier.

e) Le développement des sinus cranio-faciaux a lieu symétriquement. L'asymétrie et la variabilité des dimensions au cours du développement ontogénétique sont plus évidentes au niveau des sinus frontaux.

(à suivre)

ÉDITORIAL

Conflit d'intérêts?

Depuis quelques années, avec la formation et l'évolution de certaines spécialités médicales de la chirurgie, la profession dentaire subit des attaques qui sont de nature à retrécir son champ d'action, surtout dans le domaine chirurgical.

En somme, divers groupements de médecins voudraient, en invoquant des raisons et des prétextes de tous genres, restreindre l'exercice du dentiste pour le confiner exclusivement aux dents et même, là encore, en y posant certaines conditions.

Ces interventions de plusieurs organismes médicaux américains et canadiens soulèvent des problèmes qui ont des répercussions dans plusieurs sphères d'activité professionnelle. Elles touchent aux services dentaires dans les hôpitaux, aux programmes d'enseignement dentaire, à la question des relations extérieures, à la législation (dont l'acuité est immédiate, au Canada, à cause des projets d'assurance-santé et d'assurance-hospitalisation) et à la réaction des compagnies d'assurance en face des services chirurgicaux rendus par des dentistes à leurs assurés.

De plus, le problème ne se situe pas seulement en Amérique. Depuis longtemps, en France et peut-être plus récemment en Belgique, stomatologistes et dentistes se contestent mutuellement certaines attributions.

La situation est celle-ci: des médecins, individuellement ou groupés en association, contestent aux dentistes le droit et la compétence de pratiquer la chirurgie sur certaines parties de la cavité buccale ou sur certaines régions connexes ou en relation directe avec l'appareil buccal; en corollaire, ils nient aux membres de la profession dentaire l'entière des privilèges communément accordés au personnel d'un hôpital.

Cette opposition, on le conçoit facilement, vient surtout de la part des chirurgiens plastiques, des oto-rhino-laryngologistes et des orthopédistes. Leur champ d'action empiète souvent sur le domaine dentaire et il est normal que s'élèvent des discussions sur les limites respectives de ces spécialités avec celle de la chirurgie buccale. Procès de ligne mitoyenne!

Il faut conserver dans tout ce débat une ambiance académique et éviter les personnalités et les cas vécus. Citer des noms et relater des expériences malheureuses ferait dévier ces prises de contact vers la chicane. Surtout, en toute première place, envisager l'intérêt du malade. La discussion est ouverte et n'est pas près de se terminer.

La question se complique singulièrement au Canada à cause de la constitution du pays, qui accorde la juridiction totale aux provinces en matière de santé. Une entente sur le plan fédéral ne signifie pas nécessairement une solution dans chaque province. Tout au plus, un accord au niveau des associations nationales constituera un modèle, un plan, que pourront copier plus ou moins fidèlement les organisations provinciales.

Un autre facteur mêle le sujet: la profession dentaire n'a jamais fourni une définition précise de la chirurgie buccale. Les termes employés dans sa définition sont trop vagues et portent à trop d'interprétations.

La profession dentaire enregistre tantôt des gains, tantôt des reculs.

En Septembre 1958, un éditorial du Journal of Oral Surgery annonce qu'une association de compagnies d'assurance américaines reconnaît les services de chirurgie buccale prodigués par des dentistes et consent à les rétribuer. C'est un atout.

En mai 1957, une société nationale de chirurgiens plastiques des Etats-Unis dénonçait les traitements de chirurgie donnés par des dentistes et envoyait une copie de sa résolution à différents organismes animés du même esprit. C'est une rebuffade.

Il en sera ainsi tant que les représentants officiels des deux professions, médicale et dentaire ne discuteront pas "au sommet" le problème avec toute la sérénité et l'objectivité possibles. On a suggéré en certains milieux de confier à une tierce partie le jugement de ce dilemme. Nous nous opposons de toutes nos forces à cette idée parce que la profession médicale et la profession dentaire sont assez adultes pour régler leurs difficultés et elles le feront avec d'autant plus de facilité qu'elles envisagent le même objectif: le bien-être sanitaire du public. Elles connaissent plus que quiconque l'esprit qui les anime et l'expérience prouve que des tierces personnes interprètent toujours mal leurs sentiments. (Cf. Commission W. H. Chant, Colombie britannique, 1956).

Il est à souhaiter que tous les comités dentaires nationaux et provinciaux intéressés à la question rédigent conjointement une déclaration étayée par des principes pour établir la politique de la profession dans le domaine de la chirurgie buccale.

Gérard de Montigny.

Nouvelles de l'Association

Le Canada représenté à la réunion de la Fédération dentaire internationale

Le docteur Don W. Gullett, secrétaire de l'A.D.C. et le Brigadier E. M. Wansbrough, directeur général des Services dentaire du Ministère de la Défense nationale, ont assisté, à titre de délégués officiels, aux réunions de la Fédération dentaire internationale qui ont eu lieu à Bruxelles du 27 août au 2 septembre. Ces réunions de la F.D.I., qui se sont déroulées à l'Albertine, la nouvelle bibliothèque nationale dotée de tout l'équipement moderne nécessaire à des congrès scientifiques, étaient la 46e session annuelle de cet organisme mondial.

Première pelletée de terre à Winnipeg

La sixième faculté dentaire du Canada a eu son début officiel en juillet dernier, quand eut lieu la cérémonie de la première pelletée de terre. Cette nouvelle faculté dentaire de l'Université du Manitoba occupera, en septembre 1959, un édifice qui coûtera \$1,135,000. La première classe d'élèves a commencé ses cours en septembre dans la bâtisse de la faculté de médecine. Au nombre des invités officiels de l'Université, parmi lesquels on comptait le docteur J. W. Neilson, doyen, se trouvaient trois anciens présidents de l'Association dentaire canadienne, les docteurs M. H. Garvin, H. J. Merkeley et K. M. Johnson et des représentants de l'Association dentaire du Manitoba et de la Société dentaire de Winnipeg.

Le Colonel Baird remplace le Brigadier Wansbrough

Le Colonel Kenneth M. Baird, O.B.E., C.D., 46, sera promu au rang de Brigadier et nommé Directeur général des Services dentaires aux quartiers-généraux de la Défense nationale, à Ottawa. Le Colonel Baird commandera le corps dentaire le 1er novembre, quand le Brigadier E. M. Wansbrough prendra sa retraite après une carrière de 44 ans. Né à Ottawa, le Colonel Baird fréquenta les écoles d'Ottawa; ensuite, il fit ses études dentaires à l'Université de Toronto et au Forsyth Dental infirmary, à Boston. Il entra dans l'armée canadienne en 1939 et servit dans le Royaume-Uni et l'Europe. Depuis la guerre, il fit du service à Ottawa, Halifax et Toronto. Le Colonel Baird fut directeur de l'Ecole du Corps Royal Dentaire Canadien de 1947 à 1952 et, plus récemment, il était sous-directeur général des services dentaires à Ottawa.

Pose de la pierre angulaire à Toronto

Le premier ministre d'Ontario, l'Hon. Frost, a présidé récemment à la pose de la pierre angulaire. Le docteur Ellis, doyen de la faculté, espère que l'édifice sera terminé pour l'année académique 1959-1960.

Le docteur C. T. Bissell, nouveau président de l'Université, a déclaré que la nouvelle bâtisse de la faculté dentaire fournira au docteur Ellis "les moyens de trouver une solution aux problèmes que soulève le progrès de sa faculté".

Gold Foil — A Productive Method for the Treatment of Extensive Erosions

HARRY ROSEN, D.D.S.,* and D. C. GORDON, D.D.S.,** *Montreal, P.Q.*

Gold Foil is indisputably the material of choice for the restoration of gingival lesions where access and aesthetics do not contraindicate its use. Its advantages, recorded in all textbooks on Operative Dentistry are:

1. Insolubility in the oral fluids.
2. Perfect adaptability to cavity walls.
3. Great density, crushing resistance, and edge strength.

4. Low tendency to molecular change, being free from objectionable shrinkage and expansion.
5. Capability of receiving and maintaining a high polish, therefore well tolerated by the soft tissues.
6. Perfect weldability in the cold state, therefore can be fabricated completely in the mouth, in one appointment.

In spite of its many advantages, there is little mention in the literature of its use in the restoration of deep, wide erosions. If it has not been utilized for that purpose, we may assume that difficulties existed in its manipulation which discouraged its use. Through the years,

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however, as progress has been made in the development of other materials, which as yet, do not begin to satisfy the requirements of a permanent restorative material, some progress has concomitantly been made in the manipulation of gold foil, which facilitates its application to the large gingival lesion.

The obvious difficulties in restoring such defects can be enumerated as:

1. Cavity preparation with sufficient extension as well as sufficient retention.
2. Pulp protection.
3. Strain on both patient and operator.

By employing a few simple modifications, it is possible, today, to restore these large lesions productively with most gratifying results, and render the tooth less vulnerable to pulp and periodontal complications.

Regardless of what restorative material is employed, there is one basic problem encountered in the treatment of extensive erosions, which does not exist in the restoration of most other Class V lesions. That problem is the inclusion of the total erosion within the limits of the preparation and extension for prevention without jeopardizing the retention. This difficulty in cavity design arises where the lesion on the labial or buccal is so extensive that it extends beyond the line angles well onto the mesial and distal surfaces of the tooth.

The restoration of deep erosions with gold foil by the conventional technique presents two other difficulties, not normally encountered in restoring smaller defects. These are:

1. Pulp protection.
2. Time involved in condensation, as well as the strain on both the patient and operator with possible trauma to the tooth.

The modified technique presented below is an attempt to cope with these problems. It is a more economical technique from the standpoint of time than that conventionally used, but it is by no means a fast technique. The only restoration which is capable of producing a

comparable result is the pin inlay. To make this restoration without compromising, would involve one rubber dam application for the preparation of the cavity and the waxing of the pattern, followed by a second application of the dam at a later appointment for finishing and cementation; to say nothing of the additional laboratory expense to fabricate the inlay. As well, it is often difficult to straddle the pulp of a narrow tooth in the cervical region with pinholes if it hasn't undergone considerable recession. Superimposed upon these disadvantages, the most skilfully executed inlay cannot compare with a gold foil restoration on the basis of the adaptation of the restoration to the walls of the cavity. This restoration therefore merits more serious consideration than the profession in general has given it.

The three problems outlined above can be overcome.

NO. 1. CAVITY DESIGN WITH SUFFICIENT EXTENSION AND RETENTION.

The exaggerated mesial and distal extension can be dealt with by modifying the basic trapezoidal Class V outline.¹ Two lingual walls (one extending from the mesial wall to the occlusal wall, and the other extending from the distal wall to the occlusal wall) are incorporated to produce a preparation whose height and width are established by six walls instead of four.

If this modification is not made, it would be virtually impossible to include the total lesion in the limits of the preparation without having the mesial and distal walls extend over the proximal surfaces to encroach upon the lingual enamel. All the walls are cut to the ideal depth—the width of the cutting end of a "34" inverted cone bur, parallel to the direction of the enamel rods. Sharpening all the line angles and point angles makes it easier to start the restoration without deliberately incorporating convenience points. Retention is provided as in all cervical preparations by a reverse bevel on the gingival



FIGURE 1

Modified 6 walled outline to include total lesion. Sharp point of pencil drawn through line angles to provide contrast prior to photo.



FIGURE 2

Modified 6 walled outline leaving "V" shaped base of erosion in middle of axial wall.

wall, accentuation of the axio-gingival and axio-occlusal line angles, as well as accentuation of the mesio-axio-gingival and disto-axio-gingival point angles. Super-imposed on the retentive features on the gingival and occlusal, the mesial and distal are also utilized. Accentuation of the axio-mesio-lingual and axio-disto-lingual point angles provides the added retention needed by such large restorations without cutting beyond the ideal depth.

Rubber Dam Application.

Since erosion is primarily a disease of cementum and dentine, and since it usually accompanies alveolar and gingival recession with exposure of the root, adequate extension below the free margin of the gingiva is paramount. The gingival margin of the restoration must be finished as close to the epithelial attachment as possible without injuring it. This can only be accomplished by a meticulous isolation of the involved tooth with a rubber dam and the retraction of the

gingiva with an effective cervical clamp. As a narrow clamp will produce greater retraction of tissue than a wide clamp, it naturally follows that the use of such a clamp as the SSW 212¹ for bicuspid and anteriors or a bicuspid clamp such as the Ivory 00 for molars will produce the desired result.

A full quadrant application is made for molars, bicuspid, and cuspid, or a cuspid to cuspid anterior application is made for the incisors. The aperture for the tooth to be operated on should be offset labially or buccally with a wider than average septum on each side. The clamp is then applied, the bow or bows of which are secured or blocked with compound. This takes the tension off the clamp and maintains it in its most gingival position thereby retracting both rubber dam and gingival tissue from the tooth to be prepared. The blocking of a double bowed clamp (SSW 212) with compound is a common practice, however it may not be generally recognized that the same technical advantage can be

gained by the similar blocking of a single bowed clamp. (Ivory 00 is often used for molars where bows of SSW 212 are interfered with by the ramus). Such a rubber dam application is mandatory for gold foil restorations, and it certainly enhances the operator's possibility for achieving success using any restorative material. A well-prepared field encourages only the finest restorative treatment.

Cavity Preparation

As previously mentioned, the typical design for a Class V cavity is a trapezoid—a four sided figure. The gingival wall is governed by the width of the arm of the cervical clamp, and is placed $\frac{1}{2}$ to 1 millimeter from it. The occlusal extension is governed by the extent of the lesion. By maintaining this wall as a straight line parallel with the line of occlusion, with the line of vision, and with the occlusal walls of similar restorations in the same quadrant the best aesthetic result is achieved. An exception to this generalization is employed in the case of the upper anteriors where a slight curvature of this wall in line with the gingival contour produces a more harmonious outline. The mesial and distal extension is from line angle to line angle or just short of the retracted septum of the rubber dam. However, where gingival recession exists and where gingival erosion extends onto the proximal surfaces, such mesial and distal extension, if continued, would soon encroach upon the lingual surface of the tooth. To overcome such a complication, a second plane is incorporated on the mesial and distal walls which joins these walls with the occlusal or incisal outline. For convenience, let us term these planes the mesial-lingual and distal-lingual walls. The exact position of these walls is totally dependent on the extent of the defect. Accentuation of the mesio-axio-lingual and disto-axio-lingual point angles enhances the retention already attained between the gingival and occlusal walls.

The result is a cavity preparation of uniform ideal depth which satisfies all the principles of extension for prevention without jeopardizing the resistance and retention forms. (Figures 1 and 2).

Instrumentation

All the walls except the occlusal are prepared with the end of a number 33½ or 34 inverted cone bur, the hand piece being held perpendicular to the direction of the wall being cut. The occlusal wall is prepared with the side of the same bur. An attempt is made to carry the walls to their complete extension with the original cuts, thereby minimizing hand instrumentation. Due to the position, small size, and consequent fine detail of these cavities, all cutting is carried out with the bur rotating at slow speeds providing maximum control.

The first cut produces the gingival wall. It is approached from an occlusal direction. It is carried just to the width of the jaw of the clamp, possibly just short of it, but never beyond it. The second cut establishes the distal wall obtaining access from a mesio-buccal direction with the hand piece inclined toward the occlusal. The position of the rubber dam influences the direction and extension of this wall. The third cut establishes the distal lingual wall and it is also approached from a mesio-buccal direction, but the handpiece is inclined toward the gingival rather than the occlusal. The fourth cut establishes the mesial wall and the fifth, the mesial lingual wall. Access is achieved by a disto-buccal approach which often requires the operator to operate from behind the patient for this portion of the preparation. The sixth cut establishes the occlusal wall. It is made with the side of the inverted cone bur by introducing it almost at right angles to the buccal surface of the tooth. Because of the greater thickness of enamel in that region, the occlusal wall will be slightly deeper than the gingival wall. The axial wall with the exception of the remaining

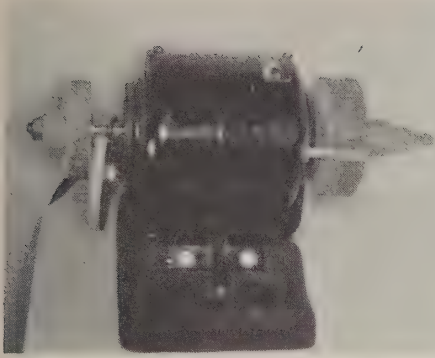


FIGURE 3

Rotary sharpening swivel stone with felt wheel.
(courtesy of American Dental Mfg. Co.)

erosion is planed with hoes and the cavity is coated with a layer of copalite to provide some insulation against thermal shock from the restoration. Following this step, all the remaining walls are smoothed with chisels. Line angles and point angles are carefully and neatly established.

Retention is established within the dentine of the occlusal and gingival walls with angle formers or hoes. With these instruments the retentive axio-occlusal and axio-gingival line angles are well developed. These are accentuated by dragging the sharp blade of the instrument along each line angle to form a trough or a track. The precision of this step can be easily detected by running a sharp explorer along each of these line angles. Definite accentuation of the mesio-axio-lingual and disto-axio-lingual point angles provides a preparation with some mesial and distal retention. Since the mesial and distal walls diverge they usually provide little or no retention in themselves.

To facilitate access on the distal wall of a posterior tooth, an angle former should be secured whose blade has been bevelled in the reverse direction (contra bevelled). The manufacturers of hand instruments will readily sharpen a small

angle former in this manner upon request.

A long bevel on the occlusal wall is established with a medium wet or dry sandpaper disc mounted on a mandrel. Where access is not obtainable at the extremities a hand instrument may be used. The mesial and distal walls require no bevel, however, a short bevel on these walls eliminates sharp external angles, increases the margin of safety during condensation and improves the extension without weakening the preparation in any way. The gingival wall which is in cementum requires no bevel.

A useful and necessary instrument in the gold foil armamentarium is the rotary sharpening stone. There are some inexpensive models available today equipped with bevel guides, swivel stones of various sizes, and felt wheels. The various stones are most versatile for sharpening all the hand instruments in one's kit, while the felt wheel coated with tripoli or rouge is most effective in maintaining the gold knives in their optimal functioning condition with a minimum of effort.

PULP PROTECTION, CHAIR TIME INVOLVED, STRAIN ON BOTH PATIENT AND OPERATOR AND POSSIBLE TRAUMA TO THE TOOTH.

If the preparation has been cut to the ideal depth, there still remains the base of the erosion in the form (Figures 1 & 2) of a V-shaped notch in the middle of the axial wall which often encroaches on the pulp. The pulp is protected by introducing into this notch a base of thick zinc oxyphosphate cement, to restore the contour of the curved axial wall. (Figures 4a & 4b) In cases where the notch is very deep additional protection can be achieved by the use of a sub-base of zinc oxide and eugenol (Zonalin) under the cement. The obvious question to follow is: How can one condense gold foil against the axial wall without dislodging or fracturing the cement? The combination cohesive mat gold-gold foil technique provides a simple solution.²



FIGURE 4a

Cement in "V" shaped notch restoring integrity of curved axial wall (side view).



FIGURE 4b

Same as 4a—Front view.

Cohesive mat gold is dispensed in the form of strips of various widths. Because of its crystalline structure, it possesses a dead soft quality which renders it easy to adapt to cavity walls. It does not, however, possess the strength of cohesive gold foil, which is made up of interlacing gold fibres.³ As well, because of its granular nature it tends to crumble if incorrectly manipulated. From a strip whose width is roughly the same as the occlusogingival height of the preparation, a number of portions or cantles are cut to simulate, roughly, the outline of the cavity.

The first portion is annealed and placed in the cavity with a holding instrument. While it is being held with this instrument, it is lightly pressed against the surrounding walls with hand pressure using a large plugger. No condensation is commenced until this first cantle has been somewhat flattened and wedged between the walls of dentine. If condensation is commenced prematurely there is a tendency for the mat gold to crumble, especially in cavity preparations where the axial wall is curved and

where the extension occluso-gingivally is exaggerated. Much frustration can be eliminated for the operator by carefully wedging this first cantle with hand pressure prior to condensation. Once wedged, this mass of gold can be condensed or malletted, concentrating at first entirely on the retentive line angles and point angles, employing a small plugger. The best condensation can be achieved by an organized process of stepping the plugger point. In larger restorations to secure the retention, a few pellets of cohesive gold foil are superimposed upon the mat gold in the retentive areas⁴. Condensation of these pellets further drives the gold into the line angles and point angles. This enables the retentive areas to be engaged with harder gold of a fibrous and more homogenous nature. Failure to reinforce the mat gold in these critical areas may prove detrimental especially in large preparations. Placing the first layer of gold in this way assures that the cement will not be dislodged or fractured.

Once retention is secured and the cement on the axial wall is completely

covered, successive layers of mat gold are added to the restoration. Each portion is annealed and wedged between the cavity walls by hand pressure before it is mechanically condensed. Sufficient layers of mat gold are quickly and easily added until the cavo-surface angle is approached. The bulk of the restoration can thus be accomplished with a minimum of effort, a minimum of time and a minimum of trauma. The operator can, therefore, conserve his resources for the addition of a veneer of cohesive gold foil pellets to this mass, an operation which must be performed with absolute impeccability.

Excesses of mat gold beyond the cavo-surface angle can be readily pinched off with the condenser point or with a gold knife prior to the addition of the veneer of pellets to the surface. The turnover of excess technique is employed for adding the pellets at the cavo-surface. This prevents the cavo-surface enamel from being struck directly with the condenser point. It provides a cushioning action as the margins are being sealed.

Only sufficient gold is added to allow for graceful contouring and smooth finishing. Large excesses beyond the margins and excessive over contouring are contraindicated. The surface is now carefully checked that no voids exist at the margins or in the contour. It is thoroughly recondensed operating the mechanical condenser at the highest frequency. This almost burnishes the surface and renders it capable of receiving a smooth polish with a minimum of instrumentation.

Both the Hollenbach pneumatic condenser (maximum frequency 360 vibrations per minute) and the Electro-Mallet (maximum frequency 360 vibrations per minute) have been employed in condensing these gold restorations. Both make appreciable contributions to the productivity of the operation. Both will accomplish the condensation effectively with a minimum of trauma to the patient. Since both these devices are equipped with contra-angles difficult access becomes

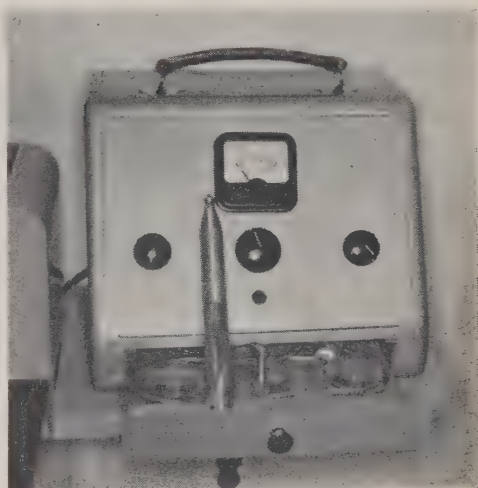


FIGURE 5
Electro Mallet.

less of a problem in restoring posterior teeth.

As with fibrous cohesive gold sufficient force must be used to produce adequate condensation. If condenser points of small diameter are used ($\frac{3}{4}$ mm. to 1 mm.) the force required (approximately 15 pounds per square mm.) is easily tolerated. Thus the wedging of mat gold is accomplished by hand pressure using points of greater diameter while the condensing or malleting is best accomplished with smaller points. To step, accurately, each blow, a rather low frequency is indicated. The surfacing of the restoration with a veneer of cohesive gold foil pellets may be accomplished with a higher frequency of lower magnitude providing the pellet size is kept small. If an attempt is made to condense a large pellet with a high frequency low magnitude vibration, the surface becomes condensed without totally compressing or wedging the pellet. The advantage of the high frequency electro mallet becomes apparent for thoroughly remalleting the surface of the veneer prior to finishing the restoration. The action of this malleting is similar to that of a burnisher. Finishing a restoration whose surface has been malleted at

high frequencies is a simple operation. From our observations restorations condensed at high frequencies and low frequencies look equally good. However the original investigators of high frequency condensation provide scientific proof that the restoration condensed by this method is a harder one.²

The electro mallet is a portable compact instrument requiring a minimum of maintenance. It has no motor which can overheat when used for prolonged periods as earlier mechanical condensers often did. The same condenser points fit both devices.⁵

Any attempt to restore large lesions without employing either of these mechanical condensers and without the incorporation of mat gold would result in an unnecessary loss of time as well as frustration for both the patient and operator.

FINISHING THE RESTORATION

Excesses from the proximal and gingival margins can be removed with sharp gold knives and push-files working from gold to tooth. This is a simple operation if a view of the outline of the preparation

has not been obliterated by too much overbuilding of gold. Once the excess is removed, the push file drawn in a pulling direction burnishes the surface.

The occlusal margin and contour are established with a narrow tapered fissure diamond point. Some lubricant on the rubber dam will prevent the rotary instruments from engaging it. The surface is smoothed with fine cuttle-fish discs. Using the conventional contra-angle mandrel with 1/2 inch discs, it is only possible to engage or finish the occlusal portion of the cervical restoration, due to the interference of the contra-angle head with the bows of the clamp. A greater area of the preparation can be finished with discs if a modified mandrel is used. Such a mandrel can be made by somewhat shortening the straight handpiece miniature head mandrel and grooving the shank to engage the bur latch of the contra angle.

The cup shaped Burlew rubber abrasive wheel also enables us to gain access to the proximal extensions. It is rotated at slow speeds and applied with intermittent action to prevent ditching of the cementum and dentine of the root and



FIGURE 6
Polish with rubber dam on.



FIGURE 7
Cuspid—Retracted gingival tissue immediately after removal of rubber dam.



FIGURE 8

Restorations after two years of service.



FIGURE 9

Same as 8. Restorations after two years' service.

over heating of the pulp. A rubber cup used with pumice followed by tin oxide will provide the final polish. If the cervical clamp is in its correct position ($\frac{1}{2}$ mm. from the gingival margin of the restoration) and the polishing is accomplished with slow intermittent rotary action, no root damage or soft tissue damage should ensue.

Upon removal of the rubber dam the

gingival tissue should appear compressed but not lacerated. Within a few minutes the proximal and gingival margins of the restoration should be rendered inconspicuous by the draping of the free margin of the gingiva over them. The restoration should appear as one continuous sweeping line across the gingival portion of the tooth.

Ultimately a restoration is attained in which the contour and marginal seal consist of cohesive gold foil, the retention is engaged with well condensed mat gold reinforced with cohesive gold foil, but in which the internal bulk consists of mat gold.

CONCLUSIONS

1. A simple modification in cavity design based on sound mechanical and biological principles makes cavity preparation for extensive erosions a more feasible office procedure.
2. The incorporation of mat gold into the restoration enables protection of the pulp with suitable dressings without fear of displacing or fracturing them during condensation.
3. The utilization of either the Hollenbach Pneumatic condenser or the Electro-Mallet accompanied by the use of



FIGURE 10

Same as 8.

mat gold to build up the bulk of the restoration opens up new horizons in the field of gold foil restorative dentistry by enabling us to treat large lesions impeccably and productively with a minimum of strain on both patient and operator.

REFERENCES

- 1—Ferrier, *Journal of the American Dental Association*. Vol. 28, Page 691, May 1941.
- 2—Koser R. K., Ingraham R., *Journal of the American Dental Association*. Vol. 52, Pages 714-727, June 1956.
- 3—Rule, *Journal of the American Dental Association*. Vol. 24, Pages 583-595, 1937.
- 4—Meyers, *Journal of Prosthetic Dentistry*. Vol. 7, No. 2, Pages 254-258, 1956.

Two Rare Diagnostic Problems

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ARTICLE NO. 3

The term Oral Surgery must not be interpreted too literally. Oral Surgery includes problems in diagnosis, some of which require no surgical intervention other than that involved in the pathological examination necessary for any firm diagnosis. Occasionally rare and interesting problems arise where knowledge of symptomatology and cooperation between dentist and physician are of paramount importance.

Two unusual cases come to mind. The first, an apprehensive man who, while having several mandibular teeth removed

under bilateral block anaesthesia, was clutching the arms of the dental chair as patients often do. But the end result was most unusual. The second was an edentulous man with marked swelling in the parotid region and a concurrent dry mouth. His complete clinical and dental radiographic examination failed to reveal any apparent cause.

Both these problems were medical in scope, and are reported to illustrate the dentist's need to know oral symptomatology. In the first case a thoracic surgeon was required to treat the condition. In the second, the dentist's role was supportive, that of reassuring the patient that he was getting from his physician the best known treatment.

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PROBLEM No. 1.

Spontaneous Mediastinal and Subcutaneous Emphysema Postoperative to Multiple Extractions

Definition: A swelling resulting from the presence of air in the mediastinum and interstices of the connective tissues underlying the skin.

Direct Origin: A leaking of air from

the lung structure.

Cause: The excessive strain, during the extractions, caused an increased intra-thoracic pressure with a resultant rupture. (Fig. 1).

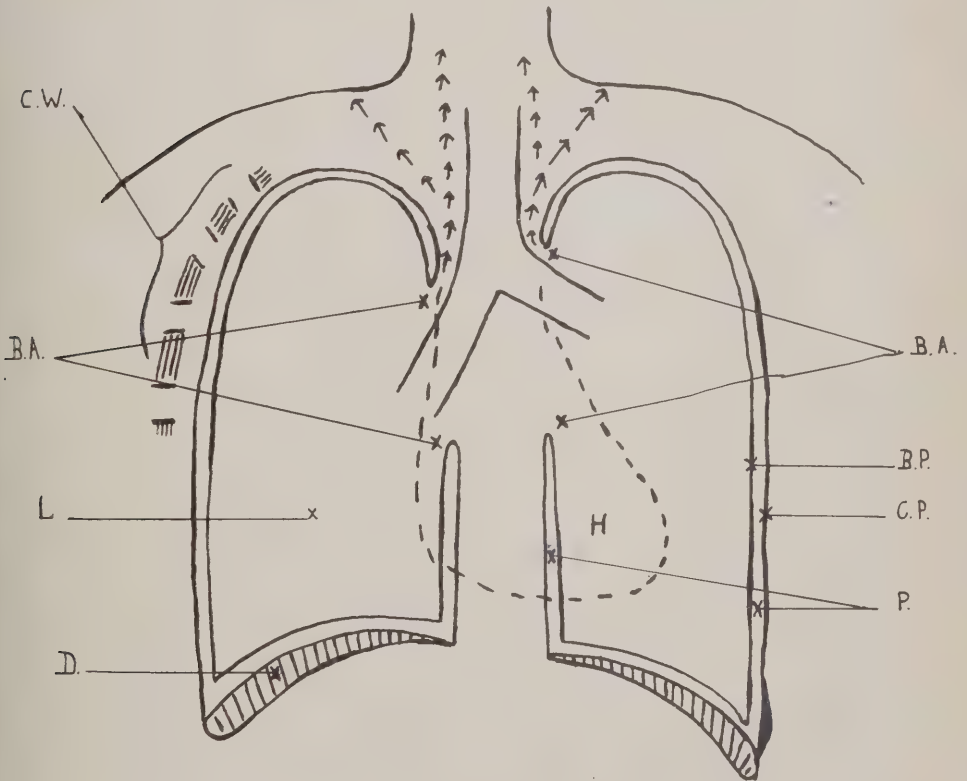


FIGURE 1

C.W.—Chest wall of ribs and intercostal muscles. P.—Pleural space between two layers of pleura. B.P.—Visceral pleura. C.P.—Parietal pleura. L.—Lung. D.—Diaphragm. H.—Heart-outline shown in broken lines. B.A.—Area about the hilum where pleura does not completely cover the lung, and where a break of lung parenchyma—due to strain—can allow air to escape into the connective tissue and, as shown by the multiple arrows, spread up into the neck and other parts of the thorax. If the break occurs any place where the lung is covered with visceral pleura the air escapes into the pleural space and the result is a pneumothorax, as the air cannot pass outside the enclosed pleural space.

Anatomical Considerations: The Mediastinum is a composite structure lying between the two pleural cavities and made up of heart, great vessels, oesophagus, trachea, main bronchi, lymph vessels, nodes, etc.

The hilum is where the blood vessels and the bronchi enter and leave the lung. This area is not completely covered with pleura.

Review of the Mechanism Involved: Air may enter the Mediastinum by several routes:

- (A)—Perforation of the air containing structures such as the oesophagus, trachea and bronchus.
- (B)—Through the fascial planes following pharyngeal, thyroid and other operations of the neck.
- (C)—Interstitial pulmonary tissue rupture. This seems to be the chief cause of mediastinal emphysema.

As an entity mediastinal and subcutaneous emphysema has been recognized for a century but only in the last fifteen years has the process been understood, Hamman and Macklin being credited with much of what is known today. During situations of excessive strain on the pulmonary apparatus, where inspired air cannot be expired coincident with a contraction of the diaphragm, rupture of an alveolar sac of the lung may result.

Mediastinal emphysema is recognized in cases involving croup, pertussis, violent efforts in parturition and respiration, straining with the glottis closed as in heavy lifting, straining at stool in spontaneous or surgical pneumothorax, or—as in the case report to follow—during multiple extractions of teeth.

In dental surgery, particularly during extractions, accumulation of fluids while working in the mouth act as a blockage and assist in increasing the pressure. The main source of pressure would be from repressed strain, clenching the chair with the hands, tensing the muscles and bearing down inside, so to speak, until the face becomes flushed. In this way intrathoracic pressure is greatly increased. (There are eight references).

CASE REPORT

This 34 year old man came for the removal of his eleven remaining lower teeth.

Physical Findings: He was in apparent good health except for a long standing sinusitis combined with a mild asthmatic condition.

Oral Examination: Examination revealed eleven teeth remaining in the mandible, from the right cuspid to the left third molar inclusive. Resorption had taken place and the gingival papillae were absent.

Immediate Treatment: Under bilateral mandibular block anaesthesia, using 2% procaine with epinephrine, the eleven teeth were removed. The teeth were large, the bone dense and the extractions difficult. The patient was given the usual instructions for proper postoperative mouth care and discharged.

Progress: Around midnight of the same day the patient's family rushed him to the hospital. It was revealed that three hours following the extractions, the patient suffered a severe swelling of the anterior cervical tissues and the face swelled markedly in the left side. Three hours later the neck became noticeably more swollen and the cervical swelling had increased and extended to the anterior chest wall. During the next hour a haemorrhage occurred from the tooth sockets after which his family became alarmed and had him admitted to hospital emergency. On admission the patient was dyspnoeic and the face, neck and chest were swollen and emphysematous (Fig. 3). Digital pressure on the swollen areas was painful and a crackling sensation was felt.

Immediate treatment consisted of pressure being applied to the sockets. Bleeding was controlled in a few minutes after which he was sent for radiographic examination. On return from the X-Ray Department, a tube was inserted into the trachea, left for three hours until breath-

ing became easier. Cold, wet compresses were applied to the swollen areas. Oxygen was made readily available and a

tracheotomy considered but withheld. The patient was positioned to avoid as much strain as possible. 1000 cc's 5% glu-



FIGURE 2

Posteroanterior radiograph showing mediastinal air, and bilateral air in subcutaneous tissues of the neck.

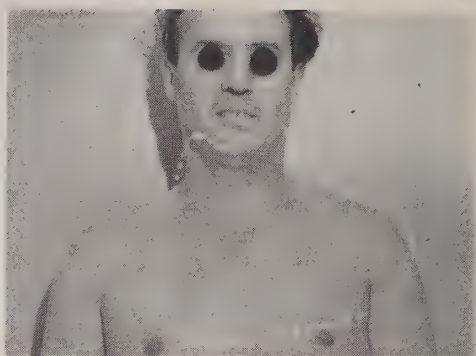


FIGURE 3

Two photographs with dotted outlines representing extent of swelling of the emphysema.

cose in saline were given for shock and adrenalin in oil— $\frac{1}{2}$ cc in 1/1000 solution—given as a precautionary measure against any bronchial spasm from the mild asthmatic condition.

Radiographic Report: "Examination of the chest and neck revealed interstitial emphysema present throughout the deep tissues of the neck (Figure 2), shoulder, anterior chest wall, and in the anterior and posterior mediastinum (Figure 2). There is no evidence of pneumothorax, atelectasis or emphysema in the lungs. The left dome of the diaphragm is somewhat elevated. There is a 2 cm. excursion of the left side of the diaphragm in expiratory and inspiratory films. The right dome of the diaphragm shows little movement. There is about $\frac{1}{2}$ cm. shift of the heart shadow to the right during inspiration. Both the heart and the mediastinum tend to lie a little more to the right than usual. (Figure 2). Both lungs seem to ventilate satisfactorily as far as radiographic appearance is concerned."

Progress: On the following day general aches and pains were still present in the thoracic region but the swelling began to subside. The next day, temperature, pulse and respiration were normal and all medication was discontinued. There was no respiratory distress and the swelling had

markedly decreased. On September 1st, the interstitial emphysema had disappeared and the patient was discharged.

Summary: Although dyspnoea was present, the temperature, pulse and respiration stayed around normal throughout. No photographic evidence was obtained when the swelling was at its maximum, but in Fig. 5 the dotted lines represent the subcutaneous emphysema at its greatest extent.

The literature suggested many situations whereby the excessive strains created by violent contraction of the diaphragm had resulted in an emphysema of the mediastinum apart from surgical origin, with or without extension to the subcutaneous tissues and with or without pneumothorax, but to my knowledge this is the first recorded instance whereby an emphysema of this nature was due to increased pulmonary pressure from strain while undergoing mass extractions.

The mild sinusitis and asthmatic condition would probably contribute to the weakness of the bronchial structures and expose them to rupture under strain, but where the rupture occurred is not known.

This emphysema, then, was felt to be due to a break in the pulmonary apparatus as a result of strain built up by the patient clenching the dental chair with

the hands and bearing down inside while the operation was in progress.

DISCUSSION—*Dr. W. Elliott Harrison:***

"This case of mediastinal emphysema was seen by me in the Vancouver General Hospital about 12 hours after admission. At that time there was a definite subcutaneous emphysema in the lower anterior neck region, and the diagnosis was quite obvious. In my opinion the cause of the condition in this particular case, would be holding the breath and straining by the patient at the time of the multiple extractions, thereby increasing the intrapulmonary pressure and causing a break in lung tissue in the hilar region where no pleura covers the lung. The air thus could escape from the break into the mediastinal tissues and then up into the neck.

"This condition is an uncommon one at any time, and is perhaps most frequently

seen in women following difficult childbirth. If there is a massive quantity of air extruded into the mediastinal tissues, it may be sufficient to interfere with circulation and respiration if it cannot escape into the neck. However, in most cases if the patient is given adequate oxygen therapy during the distressing period, the air will escape into the neck and of course be rapidly absorbed. It is said that if the condition is recognized before the air has escaped into the neck, and the patient's condition is grave as a result of the pressure symptoms, relief can be obtained by opening the thorax anteriorly through a superior approach; perhaps all that would be necessary would be to cut the cervical tissues and open the soft tissue anterior to the trachea.

"In a recent desperate case of mediastinal emphysema due to trauma, it was necessary to relieve pressure by an incision through the fascia above the episternal notch, with marked relief and a satisfactory recovery."

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PROBLEM No. 2

Mikulicz's Disease

Mikulicz, in 1888, described a chronic, symmetrical, painless enlargement of the lacrimal and salivary glands. Only about 150 cases have been reported since that time. The disease is very rare, comes on at any age, and is twice as frequent in males as in females. Some infectious agent of unknown type seems to precipitate the affection. The swelling is caused by a replacement of the glandular tissue with lymph cells. The swelling is usually, but not always, quite firm. In some cases the lymph nodes, palatal glands, lingual glands of Blondin and Kuhn may be involved but the most com-

monly involved are the lacrimal and salivary, and sometimes the one without the other.

Increased lacrimation is usually the first symptom observed when the lacrimal glands are involved, but soon after the painless enlargement of the salivary glands appear—which is the main characteristic of the disease. Finally the salivary secretion decreases and the mucous membrane of the mouth becomes dry.

In some cases the involved glands swell and become stationary, in others they swell and then recede a little. The disease comes on with no other major symptom

than the swelling which is strictly limited to the gland and does not involve any extra-capsular structures. The glands on both sides are not always involved to the same extent.

Pathologically, there is infiltration of round cells accompanied by an atrophy of the secreting epithelium and an over growth of fibrous tissue.

Morgan and Castleman showed in their microscopic study of the excised enlarged parotid glands of 18 cases clinically diagnosed as Mikulicz's Disease that lymphoid tissue replaced the acinous parenchyma while the ducts became obliterated by proliferation of epithelial cells.

The characteristic painless enlargement of the lacrimal glands followed by the salivary gland involvement should make one suspect the disease. Nothing definite is known of the cause and the course is uncertain.

Treatment: Some good results have been obtained following the use of arsenic and potassium iodide. Surgical interference is resorted to only in cases which interfere with eye function. Irradiation therapy will decrease the glandular involvement. (There are five references.)

CASE REPORT:

This 67 year old man was referred by his family dentist for consultation regarding a dry mouth and swollen parotid glands. (Fig. 1).

Present and Past History:

Three months previously the patient had first noticed a gradual and painless swelling of the glands. Salivary secretion stopped soon after the swelling was noticed and the mouth became very dry.

Past Treatment:

The patient's physician had had him on a course of treatment including antibiotics, together with potassiumiodide, 1 grain, three times a day gradually increasing to 3 grains three times a day. These treatments had been discontinued because neither had proven to be of value,

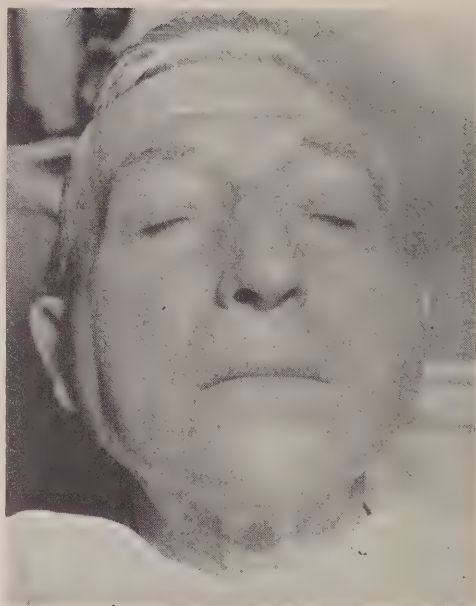


FIGURE 1

Photograph illustrates the involvement of the parotid glands with the left side more involved than the right.

and the gland remained swollen. A blood examination showed: W.B.C. 7600, lymphocytes 32%, neutrophils 63%, monocytes 3%, and eosinophils 2%. A needle biopsy of the parotid gland had been taken for pathological examination.

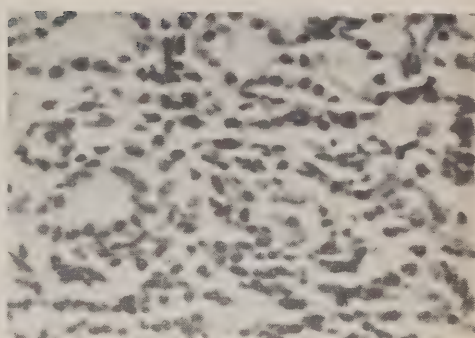
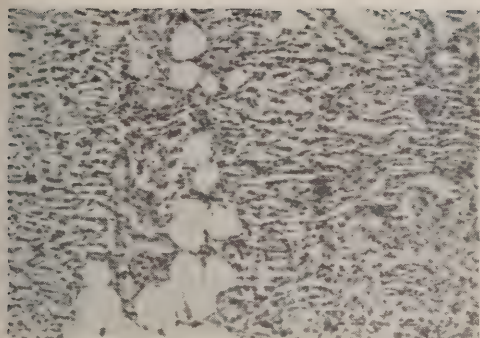
Pathological Report:

"Occasional islands of normal parotid gland tissue are observed. There is a moderate amount of inflammatory round cell infiltration in the interstitial areas. There is no dilation of the ducts and the acinar structures are moderately well preserved. Inflammatory cells of the lymphocytic series are present but not abundant. There is some interstitial fibrosis." (Figs. 2A and B).

Diagnosis: Chronic Sialitis.

The diagnosis of Mikulicz's Disease was arrived at after combining the clinical picture with the pathological report.

The patient was then referred by his physician for irradiation therapy where



FIGURES 2A AND 2B

Microphotographs demonstrating the interstitial fibrosis, lymphocytic infiltration, and compression of acinae and ducts.

he was given small doses over the parotid glands protracted over one month's time. He received a total of 800 K units, a little more being given to the left side.

Examination:

Examination in my office showed the submaxillary and sublingual glands of both sides were involved, and both parotid glands, but the left side more than the right. There was no swelling in the lips or tongue, and the lacrimal glands were not affected. The mucous membranes of the mouth appeared dry and there was no salivation. The patient stated that the dryness of the mouth was becoming increasingly intense. For relief he had to take frequent sips of water. This effect lasted only a few minutes and the mouth became dry again.

From the symptomatology and diagnosis it was evident that this was a condition for which no known cure was available. However because the patient felt desperate and wanted another opinion he was permitted to come in for one or two visits. These were used to emphasize to him that this was a medical problem

and that he was receiving the best known treatments.

Latterly his physician has had him on a course of Bimonal, a "B" compound, with a dosage of 2 cc every other day. After nine months the swelling has markedly reduced, but there has been no appreciable improvement in salivation. When the patient was last seen the right parotid gland appeared normal in size, the left one only slightly enlarged. The swelling in the submaxillary and sublingual glands had disappeared. He still had a dry mouth. His method of getting relief was to suck a "Life Saver" candy which would start salivation in one minute. However, after a few minutes his mouth would become dry again. Whether normal salivation will ever return is questionable.

Note: This type of disease is rare and its treatment falls within the province of the physician although a dentist may be consulted for its oral symptomatology. The dentist must be aware of the implication of the symptoms and refer the patient for the proper medical attention.

925 Georgia St. W.

INHALATION ANAESTHESIA—Administration of agents for the production of general anaesthesia by inhalation should be restricted to those who have had special training and experience in their administration.

Accepted Dental Remedies, ed. 14, p.35.

Sculpture in Orthodontics — The Facial Cast*

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INTRODUCTION

Facial casts show the different facial developments better than does the photograph, and are especially desirable in those patients who have unequal developments in the two parts of the face. Beauty cannot be described by any law. The problem of passing to the orthodontist an understanding of the forms and proportions which make up the acceptable face, and the changes needed to correct the face that is not acceptable, is a difficult one. The use of sculpture as an aid is helpful.

Sculpture is often called "three dimensional drawing". A figure in third dimension may be expressed in terms of a series of cross-sections. The proportions of the sections of the head are better understood if drawings of front and side views are considered first. Often a face is misjudged because of its setting, the hairdo, clothing or some minor condition, entirely apart from the face. It is helpful to think of the head and face in terms of masses and planes, which can be studied on plaster models.

VALUE OF SCULPTURAL PORTRAITS

By the use of "Sculptural Portraits" an effort is made to compare the dimensional change of a face during orthodontic treatment and growth; with the expressional change occurring over the same period. Changes can be measured, but expression cannot. The study of *expression*, is the study of the *impression*, one receives in

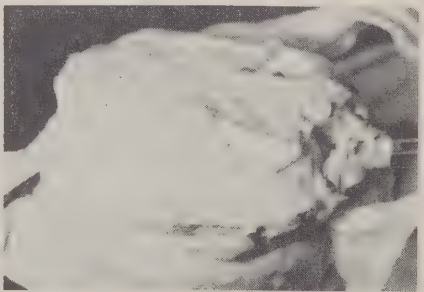
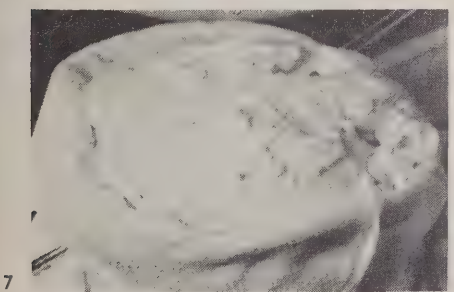
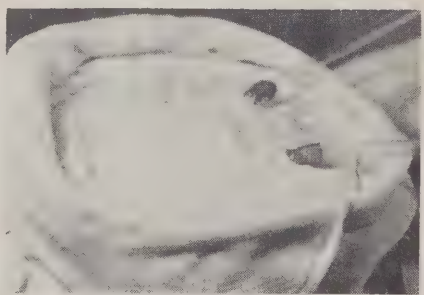
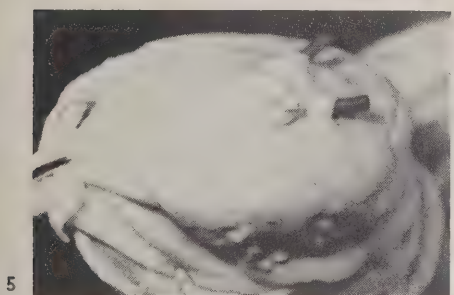
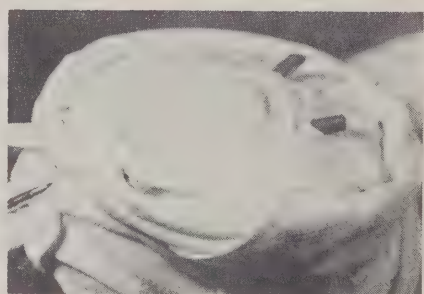
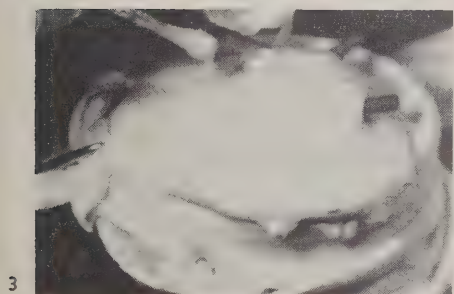
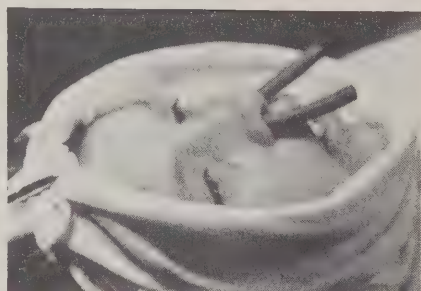
the observation of certain forms.

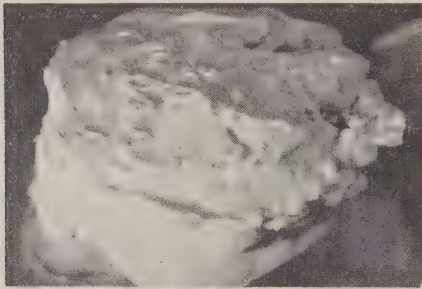
TECHNIQUE OF TAKING THE IMPRESSION

For example: At the beginning of orthodontic treatment, a sculptural portrait is made of the patient. The technique which we use is very simple and we will endeavor to outline the steps in taking the impression with visual aids, (Fig. 1—16).

1. The patient is placed in a horizontal position in the chair with the headrest placed under the neck so that the head is in the same line as the rest of the body.
2. A moist linen towel is folded in a roll and placed around the circumference of the face and held in place above the forehead with an artery forcep or paper clip. A three inch length of latex tubing is placed into each nostril as illustrated (Fig. 2).
3. A very thin mix (two parts of water to one part of alginate) of a good alginate impression material is painted on over the face and around nasal tubes with a large camel hair brush. The patient is instructed to keep a natural expression as in sleep. The eyelids are shut but not forcefully. The impression material is painted on to eyelids, the eyelashes, and lips and mouth. If the mouth is open due to protruding anterior maxillary incisors this expression is kept and the thin mix allowed to run into the mouth where it seals itself off when set.
4. After the initial setting of the alginate, a bowl full of any model plaster or stone is poured onto the alginate but care must be taken to avoid any overflow into the open nasal tubings as this would asphyxiate the patient.
5. As soon as setting takes place and sufficient plaster backing has been built up glass extension tubes bent at a 45

*Presented before the Convention of the Northeastern Society of Orthodontists, Hartford, Conn., October, 1956.





9



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16

degree angle are placed into the open rubber tube ends. This is facilitated by moistening the tube ends with a drop of water.

6. Once the glass extensions are in place they can be supported with a small amount of fast setting plaster and held into position until the plaster sets.
7. A second moist linen towel is placed about the cast and secured with a clip and another bowl of medium mix plaster is poured onto the cast level with the rim of the second towel. Salt is then poured liberally over the entire mould to hasten setting action. The heat generated is considerable but the face is insulated by the first alginate layer.
8. As soon as plaster has set hard the second towel is removed.
9. The cast and first towel layers are exposed to the air for a few minutes.
10. The cast and first towel layer are then lifted gently from the face with the lifting action in the direction of the chin and away from the nostrils. The glass tube extensions are then removed. The face appears as a clean smooth area not unlike a beauty facial.
11. This step shows the negative cast with rubber ends being lifted away from the nostrils.
12. The first towel is removed from the negative cast. The negative cast is then placed on the plaster bench and the nostril ends of the rubber tubing are plugged with carding wax to prevent the poured plaster from leaking out onto the bench.
13. A positive plaster or stone cast is poured into the negative impression, accompanied by vigorous vibration to eliminate formation of bubbles. When the positive cast is set hard it is separated from the negative impression.
14. In separating the two if it is the intention of the operator to pour a duplicate for the patient, care must be taken in separation so that the alginate impression does not pull away from the plaster impression or go along with the positive cast. If a duplicate is not desired this step can be executed without due care.
15. The positive cast can then be set up on a base made from a rubber form and any small bubbles flicked off with a sharp knife.

The lip prints appear as accurate as any finger print expert could take and if desired the model can be completed by

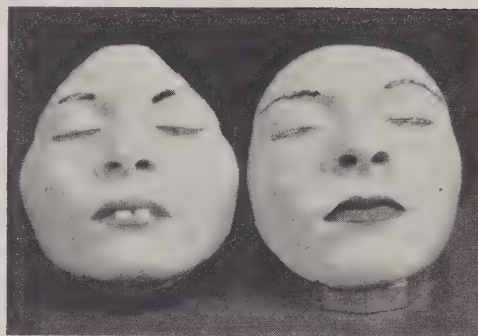
sizing it when dry. It should be allowed to dry for several days before painting. The cast can be sealed by sizing it with a thin mix of chloroform and any acrylic denture powder material or even old bits of acrylic allowed to soak in a bottle of chloroform. When the liquid is fairly homogeneous it should be thinned with chloroform and painted over all the model cast. The cast dries immediately and can be painted with a similar mixture to which has been added appropriate pigments such as flesh colors for the face, red pink color for the lips and dark brown shades for lashes and eyebrows. (Fig. 17).

Figures 18 and 19 show the results of front and side views of a cleft-palate and cleft-lip patient before and after treatment with model casts of the same patient.

ADVANTAGES OF THE SCULPTURAL PORTRAIT AND EVALUATIONS

Some men have objected to the facial cast, because of the trouble necessary to make it. This objection is not well founded. This technique for the facial impression is not complicated. The cast can be made in a short time and is not a great annoyance to the patient. Unlike the old plaster technique, the use of separators, cut out template and cardboard, fuse wire etc., this technique can be handled in comfort to the patient, and in a minimum amount of chair time. No harm can come to the eyelashes or eyebrows as with plaster, and no messy vaselined face as with the old technique. The whole impression is taken in one sitting. There is no trouble with undercuts as with plaster and any number of casts can be made with the original impression. The facial cast has so many points of superiority over everything else, as a matter of record, that it is well worth anyone's time to master the necessary technique.

After one, two and three years of treatment, facial casts are again made. These sculptural photographs show the dimensional and expressional changes. (Figs.



17



18



19

17, 18 and 19). Superimposed profile X-Ray outlines, show only very slight dimensional changes, but the expression is remarkably improved. Misleading impressions are often given by, before and after photographs, which appear in the literature, due to changes, in the grooming of the patient and in his expression, as from a scowl to a smile.

1. Dimensional Changes

If a purely scientific study is to be made of dimensional change, the exact positioning of the head must be made during the taking of records before and after treatment. If these records are photographic, even the lighting would have to be standardized, because a change of floodlights will bring out new forms, subordinate others and show an entirely different individual.

2. Facial Development

If there is a predisposition to dentofacial dysplasia, then bad habits can make a bad matter worse. When they are pretty severe and prolonged they can distort an otherwise acceptable dentofacial complex. The facial portrait will always reveal this condition.

3. Physical Growth

A combination of facial measurements, especially depth, plus roentgenographic cephalometry plus roentgenograms of the hand followed progressively (serially), will provide a better understanding of growth timing which can be fitted into the thinking of the possible utilization of growth (increase in size) in treatment.

Children do not all grow at the same time; nor do they grow at the same rates

over the years. There are "slow growers", there are "fast growers," and there are those in between. Further, there are times, in the growth of all children, of accelerated and decelerated rates. Finally there are "late maturers", "early maturers", and those in between. How can we use these ideas?

- (a) The slow growers will unfold more gradually; they are, for example, smaller, age for age, than their age and sex peers. This is their inherited potential. They will have to be watched a bit longer before they move into periods of faster growth. In a sense, slow and fast growers are below and above averages or mean values respectively.
- (b) There are, in every child, periods of fast growth and of slow growth which are quite normal. For example, growth is pretty rapid from birth to about 5 years of age (especially in the first year); it slows down from 5 to about 10 or 11; then it speeds up to about 15 or so; then it gradually tapers off. It is important to keep track of this interplay of fast—slow—fast—slow. One speed-up is very important—when the child begins his prepubertal statural acceleration it may be accepted and expected that in nine months to a year later the *facial* skeleton will also show a speed-up (corporal length and ramal height of the mandible are dimensions in point). It is at this stage particularly that the facial cast is an adjunct to proper evaluation.

4. Limitations

I am however prepared to admit an immediate limitation: since dental occlusion and *facial* structure (configuration) are not always directly correlated, cephalometric dimensions cannot always be related to kind or degree of malocclusion. In other words, a "normal" occlusion and a "normal" (or symmetrical) face do not necessarily go together, or vice versa. This admission is, fortunately, only partly true. The cephalometric measurements taken in the midsagittal plane—the *depth* dimensions—may not only be a reflection of mesiodistal relations in the teeth, but they are definitely related to all mesio-

distal measurements taken on tracings of the lateral X-Ray films. So definite am I in my thinking along this line that I regard a Class II, Division I and a Class III malocclusion, as the only ones that may frequently be demonstrated by cephalometric dimensions. This is because these classes of malocclusion are often indicative of a growth dysplasia. In a Class I and a Class II Division 2 malocclusion, cephalometry can only affirm what the clinician has already seen in making his diagnosis.

5. Prognostic Values

My final evaluation on the role of the facial cast in orthodontics is this. While it yields valuable background and understanding of the patient, it also yields a certain amount of precise knowledge concerning the face and teeth. And from there on? Well, the torch of information must then be passed on to the roentgenographic cephalometrician. Here all that we have learned of the child comes into the sharp focus of a relatively precise technique.

CONCLUSIONS

From the foregoing some considerations are emergent:

1. *Individuality* of the orthodontic patient should be recognized:
 - (a) individuality of each one's particular facial pattern assessed in *three dimensions*
 - (b) Individuality of each one's particular malocclusion (as related to the facial structures form and cast).

SUMMARY

An evaluation of the role of the facial cast in orthodontic diagnosis and treatment planning has been presented.

I believe that a study of the impressionistic effect which certain dimensional changes will bring about, to be of value in helping our young patients enter the adult world with a minimum of aesthetic and functional handicaps.

Dentistry in Europe

Just prior to the Rome Congress last fall, Dr. Don W. Gullett, Secretary of the Canadian Dental Association made visitations to several European countries. He was able, even in a short visit, to develop interesting and factual reports relative to dentistry in these countries. Short visits, however do not permit complete investigations and consequently Dr. Gullett has entitled this series of reports "Notes on Dentistry in Europe".

The previous three issues presented Dentistry in Norway, Sweden and Finland. The final report in this series will be included with the December issue and will consider "Dentistry in Holland". "Dentistry in Denmark", follows.

Editor.

PART IV

Notes on Dentistry in Denmark

DON W. GULLETT, D.D.S., Secretary, Canadian Dental Association

Population: 4,500,000
Number of dentists: 2,300
(30% female)
Ratio: 1/1906

EXPLANATION

The health scheme in Denmark, like several other countries, is based upon health insurance societies which have a long history, having been initiated just after the middle of the 19th century. These societies are referred to as Sick Benefit Societies. Initially the societies were voluntary. There are a great many of them, about 1,575 in Denmark today. The members of a profession may have a sickness fund as may any other group. (For example, shoe store employees have one).

As early as 1891 the parliament of Denmark enacted legislation giving state support to recognized health insurance societies (Sick Benefit Societies). In 1933

a National Health Insurance Act was passed establishing regulations governing these societies. Everyone who has attained the age of 21 years is under legal obligation to register as a contributing or passive member of some one society. Compulsory membership involves the payment of a lesser amount as annual premium and confers no right to benefits. The benefits must conform with the government regulations, but may vary somewhat from society to society. Every Danish citizen is required to obtain at least passive membership with some one Sick Benefit Society. In order to obtain benefits he must become an active member for which a higher fee is paid to the society. The societies are heavily subsidized by the government. In 1957, approximately 20% of the total cost was covered by membership fees and 80% came from government subsidy derived from income tax.

PUBLIC DENTAL SERVICE

The Danish scheme for dental services is a complicated one owing to the great number of societies handling the sick funds. The societies are governed by specific government regulations which have to be met, but societies do have some leeway resulting in variation of benefits, particularly respecting dental services. The variation is from extractions only to full conservative dentistry (plastic fillings only). None includes gold restorations or prosthetic dentistry as benefits. Children under 18 years of age are not included for dental services by the societies as they are covered by the school dental service. School age children are provided free dental service in theory at least, for it is said there is a deficiency of school dentists. Beyond school age dental service is secured through membership in a Sick Benefit Society.

The benefit services as well as those services not provided by the scheme are rendered under private practice conditions, and the patient pays fees directly to the dentist, for the non-benefit services. Every graduate by law must serve with another dentist as an assistant for a two-year period before being granted a licence to practise by himself. The result is that the new graduates perform a great deal of the benefit services while the dentist owning the practice performs the services not included as benefits on private practice fee basis. The dental services under the sickness benefit arrangements are performed in private offices of dentists. At one time some of the benefit societies had clinics but the dental association opposed them and they have been eliminated. Payment to the dentist under the scheme is by means of a fixed fee schedule.

In addition to the Sickness Fund schemes, government dental services are provided in social institutions. Every community is allowed to institute a school dental service. Approximately one third of the dentists working under this service are full-time employees. A relative-

ly high percentage working in this service is female. Complete dental service is provided children, excepting orthodontic service which is being gradually extended. Until 1956 school services were performed largely in private dental offices. The profession went on strike for higher remuneration and the government reacted by making the service a full-time salaried one. In welfare institutions and the school service, dentists are paid from 24,000 to 27,000 kroner* a year. It was reported that the average dentist in private practice has a net income of between 40,000 to 50,000 kroner and hence it is difficult to obtain dentists for the government dental service.

AUXILIARY PERSONNEL

Training for dental technicians is carried on in vocational schools by evening classes. During the daytime the student works in a laboratory or with a dentist (very few with dentists). The course is of four years duration and examinations must be passed in order to qualify. Consideration is being given to making one full academic year compulsory. For 150 years technicians in Denmark have been permitted to take impressions. At the present time a commission is set up to study the whole matter and it is generally assumed that such practice will be stopped.

Denmark has no formal training courses for dental assistants and there are no dental hygienists.

DENTAL PERSONNEL

Like other countries, particularly those with dental service plans, Denmark has a shortage of dental personnel. Plans for increasing teaching facilities, as stated below, will assist greatly in overcoming the shortage. However, the question of training so large a percentage of female dentists has been under discussion in Denmark. The stated facts are that the school has graduated 2 wo-

*In 1957 the rate of exchange was 7 kroner to the dollar.

men for every 3 men since the beginning but the percentage of practising female dentists has never exceeded 30% at any time and part of these only partially. This is considered too wasteful of time and teaching facilities. The dental course is popular with young girls and when attempt was made to cut down the number of girls to be admitted to the course they had rebellion on their hands.

DENTAL EDUCATION

The Royal Dental College of Copenhagen is the only dental school in Denmark. This school was built in 1939-41 and has a capacity of 100 students per class. The College is a government institution (state school) under the direct supervision of the Ministry of Education. The head of the dental school is known as the Rector (Dean), who is in charge of teaching and administration. The Rector is elected by the faculty staff members for a term of five years. The name of the man elected is submitted to the government and the actual appointment is made by the King which lends prestige to the position. Re-appointment has been made for a second term but it is considered that not more than two terms would be given to any one man.

The deanship is not actually comparable to the position on this continent. The Dean is always head of a department and continues as such after his appointment. The administration is actually in the hands of the Registrar of the school, who has been trained for several years, probably in the ministry of Education, and appointed to the position by the Ministry. The members of the staff on the dental school are civil servants paid directly by the government.

The dental school is located on the new university campus. The attitude of Copenhagen University has been not to expand from the five established faculties of theology, law, medicine, arts and science. The schools for dentistry, pharmacy, veterinary, architecture, etc. are known as High Schools in Denmark, meaning

higher education. However, it is thought that the relationship between the university and the dental school is drawing closer.

The present school building is good but too small and it is well equipped under rather crowded conditions. Plans are underway to build an addition during 1958 which will double the size of the building. When completed the size of classes will be increased from 100 to 125. Plans are also under way to build a new school in Jutland to accommodate 75 students per class which will total 200 graduates a year for Denmark.

University education in Denmark is free but students in dental schools pay 1/10th of the cost of operating the school. This amounts to approximately 400 Danish kroner a year for each student to pay. The state owns the instruments used in the school. They are loaned to the student on a rental basis of 300 kroner a year, making 700 kroner (\$100.00) in all for the student to pay annually. The expectation is that academic fees will be eliminated soon.

Pre-dental Course

Both the dental and medical courses are popular with youth of both sexes in Denmark. The number of applicants for the pre-dental course is approximately 300 each year and 200 of these are accepted, being those with the best examination results. The pre-dental course is one year in length. The standard of admission is the same as for the University of Copenhagen. Applicants must be at least 19 years old and may qualify in two ways; either by having taken successfully the School Leaving Examination or by passing a special examination in physics, chemistry, biology and physiology. The chief subjects of the pre-dental year are Anatomy (Osteology, Cytology and General Histology), Physiology, Inorganic and General Chemistry, Gross Dental Anatomy and General Dental Technology. Admission to the dental course proper is decided on the basis of the results of the examinations at the

end of the pre-dental year. Normally 100 of the pre-dental students enter the dental course each year, that being the capacity of the school. The pre-dental year is called a selection course.

Dental Curriculum

The academic year is divided into two

terms, each consisting of 16 weeks. The school is closed during July and August. Anyone obtaining Degree (Diploma) in Dental Surgery must do the full four years course as laid down and must pass the four examinations at the end of each year, usually held in June. The training program is as follows:

	Lectures	Laboratory Exercises or Clinical Demonstrations	Clinical practice	Seminars	Total
<i>1st Year</i>					
Anatomy, Histology	96	30	—	96	222
Organic Chemistry and Biochemistry	48	42	—	48	138
Dental Technology	96	384	—	—	480
	240	456	—	144	840
<i>2nd Year</i>					
Physiology of Nutrition	64	—	—	—	64
Pathology with Bacteriology	96	16	—	—	112
Pathological Anatomy with Histopathology	64	16	—	—	80
Fundamentals of Clinical Odontology and Oral Diagnosis	32	35	35	—	102
Prosthodontics	64	64	315	—	443
Dental Pathology and Operative Dentistry	16	35	262	—	313
	336	166	612	—	1114
<i>3rd Year</i>					
Pharmacology	48	—	—	—	48
Radiology	32	—	6	—	38
General Surgery	64	—	—	—	64
Fundamentals of Clinical Odontology and Oral Diagnosis	—	—	35	—	35
Anthropology and Comparative Anatomy	16	—	—	—	16
Oral Surgery and Anaesthesia	32	—	64	—	96
Orthodontics	32	—	128	—	160
Prosthodontics	64	64	288	—	416
Dental Pathology and Operative Dentistry	96	64	288	—	448
	384	128	809	—	1321
<i>4th Year</i>					
Radiology	—	—	6	—	6
Orthodontics	32	—	192	—	224
Oral and Maxillofacial Surgery (+ training in Maxillofacial Department for In-Patients)	32	32	192	—	256
Prosthodontics	64	64	336	—	464
Dental Pathology and Operative Dentistry	32	64	384	—	480
	160	160	1110	—	1430

Approximate total of hours:

Pre-dental course	647 hours
Dental Course	4705 hours
Total	5352 hours

According to an Act of February 25th, 1916, stating regulations for dental practice, graduates must work with a recognized dental practitioner or at a recognized state or municipal clinic for two years before they are allowed to establish their own practices. (Licence granted at end of the two years.) The title "Tan-laege" is restricted by law to persons entitled to practise dentistry.

The number of full-time staff-members is 14 with a full lay and qualified staff in all of 170. The same professors teach basic sciences to medical and dental students.

The higher degree of "Doctor of Odontology" is awarded on a thesis based on advanced research work. Persons holding this degree are entitled to lecture at the Royal Dental College.

COMMENT

1. A main characteristic of the health insurance system in Denmark is that there is variety. Such diversity makes for variation in administration and benefits.
2. The point respecting relatively high percentages of female dental personnel is interesting. All Scandinavian countries have, comparatively, a high ratio of female dentists. The popularity of dentistry as a career among girls is notable. The stated critical analysis on this point is undoubtedly caused by the shortage of dentists.
3. The Copenhagen School is an efficiently operated teaching institution. Study of the curriculum will indicate some marked difference from courses in Canadian schools.
4. Like other highly socialized countries, Denmark has high taxation in order to support the social security benefits.

The fluorine atom contains nine electrons; two in the inner orbit, and seven in the outer shell. This electron arrangement explains the readiness with which fluorine atoms unite with most metals to form salts. Sodium fluoride, for example, is a salt in which the fluorine atom has captured an extra electron from the sodium atom, and in so doing, creates the molecule of the compound sodium fluoride.

When underground water seeps over the rocks containing fluoride salts, or when sodium fluoride is added in minute quantities to large volumes of water, a dilute solution of the fluoride salt is formed.

In this soluble state, the physical characteristics of the metal and fluorine parts change from the original state.

The molecules of sodium fluoride split into two new identities, sodium ions and fluorine ions. The fluorine section of the sodium fluoride molecule, retains the extra electron, which it had captured from the sodium metal, and now has one more electron than the original fluorine atom, and carries with it a negative charge of electricity.

It is this peaceful fluorine ion, which in the proper concentration in a public water supply reduces the incidence of dental caries among the children who drink the water.

The metal part of the salt is changed also. The sodium becomes an ion, but it has lost an electron and carries a positive charge.

It makes no difference from which fluoride compound the fluorine ions are obtained. The ions are all alike, and equally effective in the prevention of dental caries.

W. L. Hutton, M.D., 60 William St., Brantford

Fifty Years of Dental Education

Commemorated by Dalhousie Faculty Opening

On September 25th the Official Opening of the new building of the Faculty of Dentistry of Dalhousie University took place and this significant event served as a commemoration for the celebration of fifty years of dental education in the Atlantic area of Canada. A Special Convocation was held in which four prominent members of the profession were honoured (See 'The Provinces'). The following are the Address of Welcome by Dean J. D. McLean and the Convocation Address by Dr. Philip E. Blackerby Jr.

Editor.

Address of Welcome

JAMES D. McLEAN, D.D.S., F.I.C.D.

The celebration of Anniversaries is a time-honoured and worthy custom. To me it seems that these celebrations have a three-fold purpose. They are a time for reflection upon past events, a pause for the possible re-adjustment of our perspective. Secondly, although this is not always so, anniversaries are a time for happiness and thanksgiving—experiences we enjoy sharing with friends. Anniversaries should also be a time for looking into the future in an attempt to establish broad objectives.

Today, we mark the fiftieth anniversary of the establishment of formal dental education in the Atlantic area of Canada. Through the efforts of the Nova Scotia Dental Association, the Maritime Dental College was established in 1908. At first, the College was only affiliated with Dalhousie University, but in 1911, before the first class of students had graduated, the Maritime Dental College had become the Faculty of Dentistry of Dalhousie University. Although there are older schools of dentistry in Canada, our Faculty claims

the distinction of being the first University Faculty of Dentistry in this country.

The fortunes of the Faculty, reflecting the situation in the University as a whole, have varied over the years. Despite the fact that financial resources were never plentiful, the Faculty has established a fine and honoured place for themselves and for their graduates. In recognition of their steadfastness of purpose and fine contribution to the Faculty over many years, I should like to pay particular tribute to two former Deans who are with us this afternoon—Dr. W. W. Woodbury, one of the first teachers and for many years Dean of the Faculty, and Dr. J. Stanley Bagnall, for many years the only full-time teacher and later Dean of the School.

About 1951 or 1952, the Board of Governors of the University determined that the physical facilities of the Faculty of Dentistry must be improved; that provision must be made to increase the number of graduates so that the needs of the area might be met more adequately; and that the only practical way in which this might



FACULTY OF DENTISTRY, DALHOUSIE UNIVERSITY, HALIFAX

be done was to construct a new building for the Faculty. The course of action was determined. Implementation was not as simple a matter. The eminent historian, Arnold Toynbee, has suggested that the character of civilizations, faced with a reasonable degree of difficulty in their struggle for survival, was stronger and more worth while than those civilizations which had found life easy. If this same theory can be applied to individuals, I am certain that some very fine character has been developed in the administration personnel in the last few years. The way forward in our project was not easy. I cannot express too strongly my own personal appreciation and thanks, and that of the Faculty, to Colonel K. C. Laurie, who was Chairman of the Board of Governors when the project was initiated; to the late Brigadier H. V. D. Laing, who first acted as Chairman of the Building Committee, and later as Chairman of the Board of Governors; and most particularly to President A. E. Kerr. All that could reasonably

be expected at this time has been done for our Faculty.

We know that development must continue, but for the present at least, I am satisfied that though there may be larger and more elaborate schools—we have the facilities to compete with the best in our undergraduate teaching programme.

This is a memorable occasion for Dalhousie and for the dental profession in the entire Atlantic community which we serve, but by far the greatest significance is for the general public of Eastern Canada. In the last analysis, public service is the only justification for the fine development we are to dedicate today.

And so, ladies and gentlemen, on behalf of the University, I welcome you to our celebrations, citizens of the region, colleagues from the Universities of McGill, Montreal, and Toronto; representatives of Canadian dentistry, and our loyal and staunch supporters—the dental profession of the Atlantic community.

"Dentistry's Challenge to Greatness"

DR. PHILIP E. BLACKERBY, JR., *Battle Creek, Michigan.*

CONVOCATION ADDRESS

On this memorable occasion it is my privilege to pay tribute to two partners in a noble enterprise—Canadian dentistry and Dalhousie University. The handsome new building which is being dedicated on this, the 50th anniversary of Dalhousie's distinguished Faculty of Dentistry, is a proper symbol of the remarkable progress and achievement which have characterized dentistry and higher education in Canada during the past half century. It is, I think, a fitting monument also to the vision and determination of the leaders, past and present, of this University and of the dental profession who have joined efforts through the years to bring this institution to its present high level of distinction and public service. Humbly and with deep respect, I salute you both.

Throughout this vast land, the dentists of Canada have earned the admiration, respect and friendship of their professional colleagues across the border. We in the United States, with common problems and mutual interests, have taken from Canadian dentistry as many cues as we have given. We have been deeply impressed with the calibre of leadership and the record of accomplishment of the Canadian Dental Association. We have watched with admiration the sound and rapid progress of dental education, under the aegis of your great universities, from Halifax to Edmonton. We have taken inspiration from the remarkable growth of dental public health services in Canada in recent years. We have gratefully shared and benefited from the Canadian leaders who have contributed so generously and so well to the activities and deliberations of

the American Association of Dental Schools, the American College of Dentists, the Council on Dental Education, the International Association for Dental Research and other professional organizations of United States origin. And, more and more, we have come to forget the artificial boundary lines which separate us as nations and as neighbours.

Thus, in preparing the following remarks I have purposely refrained from differentiating Canadian and American dentistry. The problems and challenges to which I shall refer are not peculiarly Canadian or American—they are *our* problems and challenges, and I am confident that we shall meet them *together*.

Is dentistry a profession—or a business? To many dentists such a question would probably provoke a defensive reaction with a comment something like, "Why, obviously, dentistry is a profession, and a great one, at that." Some, more conscientious members, might point to the manner in which dentistry fulfills a well-known definition of a profession, that of the late Supreme Court Justice Louis D. Brandeis, who said, "A profession is an occupation for which the necessary preliminary training is intellectual in character, involving knowledge, and to some extent learning, as distinguished from mere skill; it is an occupation which is pursued largely for others and not merely for one's self; it is an occupation in which the financial return is not the accepted measure of success." A few of the more objective and thoughtful practitioners might say, "The

question has a point—we dentists think of ourselves as professional men but sometimes act like merchants, selling wares rather than rendering services.”

The analogy is not intended to reflect unfavourably upon the businessman, who is usually an honourable and respected member of society. But even the least informed layman would agree that something more noble is expected of the professional man than of the merchant, that the title of doctor, lawyer, minister or teacher carries a connotation of dignity, of altruism, of selflessness, of service to one's fellowman.

So it is incumbent upon professional men, individually and collectively, to submit themselves to a constant self-evaluation, to examine their images in the public mind and, like the businessman, to audit their assets and liabilities, but from a professional rather than a material point of view. For it is apparent that, like all humans, the members of a profession represent a wide range of intellectual, moral and spiritual qualities, and each is subject to change with time, for better or for worse.

The dentist, as a professional man, is largely the master of his own destiny, endowed by law with a monopoly for the practice of his profession, and bound only by his own conscience to observe certain fundamental principles of ethical conduct set forth by his professional colleagues to guide him and to protect the public. True, he is governed by certain broad legal restrictions and he is subject to civil suit in the event of gross negligence in the care of his patients. But in the main, the dentist, far more even than the physician, is free to exercise his individual judgment in the practice of his profession. In his hands alone, then, rests the dental health fate (and sometimes the very life) of those who seek his services.

Within this professional freedom lie both the danger and the challenge for the future of dentistry—the danger of materialism and mediocrity and the challenge of true professionalism and greatness. It

is indeed a tribute to dentistry in Canada and the United States that, as a comparatively young profession, with a very high degree of autonomy and self-direction, it has achieved a standard of excellence and a steadily rising public respect which have been recognized and acclaimed throughout the world. And, in view of the very limited financial support accorded dental education and dental research by the public, it can be said that dentistry's achievements to date have been truly an “Operation Bootstrap”.

Despite this remarkable record, however, there remain many problems to solve and much room for further development and improvement, if dentistry is to meet fully the challenge of professional greatness. These are both broad and specific, tangible and intangible, immediate and long-range. They are not representative of the entire profession, but characterize to varying degrees individuals and groups within dentistry. They include the following:

(1) *Dentistry must demonstrate its true significance to society.* Dentists themselves, and through them the public, must develop greater awareness of the potential breadth and importance of the ideal dental health service. Moving beyond its traditional pattern of remedial treatment, dentistry must develop and apply a broad concept of prevention, diagnosis, oral-systemic relationships and an increasing concern for the patient as a whole person. Restorative procedures need not be de-emphasized, but they should come to be viewed in terms of their broader significance in the prevention and control of disease, the restoration of function, the improvement of aesthetics, and the promotion of positive health. Greater attention must be given, for example, to dentistry's role in the detection of oral cancer, in the recognition of oral manifestations of systemic disease, in the diagnosis and interception or correction of malocclusions and facial deformities, in the oral rehabilitation of the chronically ill, and to the dentist's proper place in the fields of geron-

tology, nutrition, mental hygiene and public health. And through education the *public* must be made aware of the true scope—the real significance of dental health service and its importance in the prevention of disease and the maintenance of general health, both for the individual and for the community.

(2) *Dentistry must throw off its traditional yoke of professional isolation.* The lone practitioner, lacking daily contact or consultation with his dental or medical colleagues and with little exposure to the health problems and programs of his community, is in a poor position to serve effectively on the health "team". In contrast to the physician, he has no opportunity to observe daily the practice methods of his colleagues, to consult with them on difficult problems, or to utilize the special facilities and personnel of the hospital to aid him in diagnosis and treatment of his patients. Moreover, the potential contribution of the dentist in the team approach to total patient care is largely lost when his professional activities are restricted entirely to his private office. Dentistry must seek its rightful place on the hospital staff, must exploit the concept of group practice, must provide for itself continuous opportunities for inter- and intra-professional consultation and exchange.

(3) *Dentistry must rise above any real or implied sense of inferiority.* Individually and collectively, dentists have tended to react defensively when they were compared with physicians. The not unfamiliar question, "Are you a doctor—or just a dentist?"; the hallowed vision of the country doctor; the cartoons and editorial jibes associating the dentist with pain and fostering the illusion of "tooth carpentry"; these and other rapidly fading manifestations of an uninformed and distorted public opinion of dentistry cannot be merely laughed aside, but must serve as a challenge to the profession to discharge ever more effectively its responsibility for public education and truly professional service. Dentistry cannot and should not expect to bask in the reflected glory of the "men in

white", nor should it borrow the pseudonym of "a specialty of medicine". Dentistry can and must stand on its own record of character and performance, provided, the vast majority of practitioners adhere steadfastly and with deep conviction to the broad objectives of dentistry as a true health service—not as craftsmen, not as artisans, not as tradesmen, but as professional men, in the finest sense.

(4) *Dentistry must rid itself of any trace of materialistic or commercial attitude or practice.* Notwithstanding some of the "practice management" experts, the dentist who "sells" fillings and dentures, who "promotes" full mouth rehabilitation, who does "treatment planning" on the basis of his patient's financial status, places himself and his profession in the role of the merchandiser. He is yielding to the profit motive and is guilty of conduct unbecoming to professional man. At the same time, the practitioner who fails to inform and educate each patient as to his total dental health needs, based upon a careful and comprehensive examination, diagnosis and recommendation for treatment, is neglecting his professional duty. If the distinction seems too fine, it is because of the delicate balance between professional competence and professional conscience, between patient education and patient understanding. The welfare of the people he serves must be the guiding motivation—the prime concern—of the true professional man.

(5) *Dentistry must broaden its perspective in education and research.* Restoration, Removal and Replacement, traditionally the three R's of dental education, continue to dominate the thinking of too many of our dental educators today. While these subjects constitute a basic and essential part of the curriculum, they must not be permitted to monopolize the teaching program, at the expense of preventive dentistry, diagnosis, oral medicine, and the clinical application of the biological sciences. Students must be encouraged more and more to think and practise in terms of

prevention rather than repair, of health rather than disease, of biology rather than mechanics, of patients rather than dentures or fillings. And the scope of our research must be broadened to place greater emphasis on the systemic relationships of dental and oral diseases, to direct more attention to the search for means of preventing disease and disability, and of promoting positive oral and general health. Too much of our research effort today is devoted to the development and refinement of materials and techniques, and to relatively inconsequential problems bordering on minutia. Public support for dental research in the United States, for example, has increased nearly 4,000 per cent in the past fifteen years, and if we are to continue to justify such increased public confidence and trust, we must add breadth and depth—as well as vision—to our research efforts.

(6) *Dentistry must increase its practice efficiency in order to serve more people.* Recent manpower studies and projections point clearly to a serious shortage of dental manpower in the next decade and beyond. With a rapidly growing population and a steadily increasing public demand for dental care, it appears highly unlikely that the future supply of dental personnel will be expanded sufficiently to meet the need. In the United States, for example, it is estimated that two new dental schools per year, or the equivalent expansion of existing schools, will be required to produce the additional dentists expected to be needed by 1970, just to keep pace with population growth alone. And with only 45 per cent of our people having sought dental care last year, the potential for increased demand is tremendous. Thus, dentists must utilize every reasonable means to increase their individual and collective patient loads without sacrificing the quality of their services. The most likely possibility, of course, is the extended and more effective use of auxiliary personnel and equipment, for it has been shown that dentists using chairside assistants, hygienists and two or more chairs, serve up to

three times as many patients as do practitioners working alone and with but one operator. At the present time, however, only eight per cent of dentists employ a dental hygienist and 40 per cent do not utilize an assistant. It seems clear, therefore, that not only must more practitioners be encouraged to use such auxiliary personnel and equipment, but facilities for their training must be greatly expanded to supply the additional personnel required.

(7) *Dentistry must strengthen and enlarge its facilities for graduate and continuing education.* As the body of dental knowledge continues to expand, it is inevitable that specialization will become as common in dentistry as it is in medicine. Already, the demand for graduate training in the recognized specialties of dentistry is placing a heavy burden on our dental schools and, to an increasing degree, our hospitals. Nearly 1,000 students were enrolled in graduate study in thirty-six schools last year, and the number has been growing each year. In addition to preparing dentists for specialized practice, our graduate programs must be made adequate to train the large number of teachers required for existing and new schools in the years ahead. And for this latter purpose, the graduate curricula must be strengthened and enriched to meet the particular needs of the dental teacher, over and beyond clinical proficiency in a specialized field. This will involve principles, philosophy and methodology of education, pedagogy and research, as well as a thorough grounding in the basic medical sciences.

Furthermore, our schools must meet the challenge of an increasing demand for *continuing* education opportunities for the general practitioner, the specialist and the teacher. Recent advancements in dental materials, instruments and equipment, as well as improved methods of diagnosis, prevention and treatment, have re-emphasized the necessity for the dentist to seek periodic retraining and refreshing if he is to keep his practice up-to-date and serve

his patients adequately. While nearly all of our dental schools, during the past ten years, have initiated at least limited programs of continuing education, these efforts must be greatly expanded in the future to meet the needs of a much larger segment of the profession than the five per cent who participated in such programs last year.

(8) *Dentistry must find ways of easing the financial burden of universal dental disease and disability.* For every family, regular expenditures for dental care are almost as inevitable as death and taxes. And for many families, these costs may constitute a comparatively heavy burden, especially when they become exaggerated by neglect. Recognizing this problem, dental societies have developed post-payment plans to spread the payment of dental bills through the installment system. However, with the phenomenal growth of pre-payment hospital and medical care plans, it is obvious that dental services should and will be incorporated into this popular system of health "insurance". There have been a few efforts in this direction, but the number of persons in the United States having even partial dental coverage is less than a half million, whereas more than one hundred million, or over sixty per cent

of the total population, now participate in some type of hospital and/or medical prepayment program.

These are but some of the problems facing dentistry in the years immediately ahead. They exist in but slightly varying degree in Canada and the United States. They are problems that will challenge not only the best minds in dentistry, but will demand the collaboration of other professions and disciplines, as well as public understanding and support. They will provide incentive for curricular change and redefinition of objectives in our dental schools, for reorientation of our research efforts, for modification of our practice methods, and for gradual adjustment in our professional philosophy. They are problems worthy of a great profession. They are dentistry's challenge to greatness. And the greatness of a profession may be manifested in many ways—in its purposes, its courage, its moral responsibility, its cultural and scientific eminence, in the tenor of its daily work. But ultimately the source of its greatness is in the individuals who constitute the living substance of the profession.

"The pursuit of excellence: Education and the future of America." Special Studies Project V. Rockefeller Bros. Fund. 1958 Doubleday & Co., Garden City, New York.

FACULTY OF DENTISTRY — ALUMNI DAY

FRIDAY, NOVEMBER 28th, 1958

Faculty of Dentistry, 230 College St., Toronto

9:30 a.m. — 5:00 p.m.

PROGRAM:

- "Radiographic Interpretations"—Dr. George A. Morgan.
- "Is topical application of stannous fluoride practical and effective?"—Dr. Ralph C. Burgess.
- "Endodontics in preventive dentistry"—Dr. George C. Hare.

LUNCHEON—Chez Paree—Address—Dean Roy G. Ellis.

- "Case Reports"—Dr. Albert A. Antoni.
- "Table Clinics"—Staff members of Paedodontic and Orthodontic Departments.

All members are urged to attend this event.

EDITORIAL

Dentistry and Socialism

Recently an esteemed colleague of ours suggested in an editorial¹ that the development of Dental Service Corporations was contributing to socialistic practice through the banding together of any group of individuals to obtain services at a fixed fee scale and wherein the recipient of the service does not directly assume the obligation to pay. Dr. James believes that this form of contract practice is detrimental to the professional status of dentistry because he contends that "wherever socialized practices have existed for any length of time, there has occurred a progressive deterioration in the practices—a descent to successively lower levels of mediocrity."

Medicine has, for years, been engaged in the administration of health plans on a pre-paid basis wherein the individual, his employer, his association, or his union provides the necessary premium to permit him to receive medical care which is paid for by the "third party" on a more or less fixed fee-for-service basis. The possible catastrophic nature of general health care has made almost mandatory a coverage of this nature. It is a matter of opinion or argument whether or not there has been a deterioration in the quality of the medical services provided.

The insurance principle, in respect to health care, is now well established. People band themselves together in order that the risks of incurring significant ex-

penditures may be spread as thinly as possible. Medicine has recognized the need and has given leadership in the development of plans to make it possible to provide a means whereby most persons, irrespective of their financial resources, are able to obtain physicians' care. The fact that most of these plans have been effective and are administered more efficiently and certainly more economically than could governments, has served to minimize governmental interference with the traditional patient-physician relationship.

For those persons who require social service assistance medicine has developed plans whereby the profession is able to provide the entire administration on the basis of a per capita beneficiary grant from the participating governmental department. The dental profession in a very limited way, has been engaged in similar plans.

Dentistry, however, does not lend itself particularly well to the pre-paid principle. The character of dental diseases is such that treatment is more budgetable than insurable. The traditional attitude of the public to dental care also militates against the successful development of insurance schemes. Dental disorders are fundamentally not as frightening as other forms of sickness and the interest in and concern for dental insurance has not been significant. This does not mean, however, that attitudes are not beginning to change.

While, as has been suggested,² a dental

1. James, Allison G.—"What is Socialized Practice?"—Editorial—J. South. Cal. State Dental Association 26:344.

organization may dislike having the initiative for making some professional decisions taken from the office of the private practitioners and placed under the control of an impersonal corporation, the profession might find infinitely more distasteful some of the alternative arrangements involving governmental intervention or interference. A corporation developed under the aegis of the profession, remains an organization under the professional guidance of dentists themselves. As long as large groups of people, because of inadequate financial resources, find it difficult or as in some instances almost impossible to provide for themselves adequate dental care, a demand will exist for such schemes. We still hold to the tenet that "the future of dentistry will be determined by the needs of the public and not by the needs of the dentist."

The further development of a post-payment plan for dental services in Canada provides, at least, a partial answer to the extension of treatment services to lower-income groups. Here a distinction must be made between post-payment plans existing generally in the United States which are arrangements whereby a group will guarantee repayment of a loan which the patient obtains from a bank for the purpose of financing dental service. It is not difficult to see an advantage here for the profession but it is somewhat more than obscure how such an arrangement can be considered a health measure designed to extend dental treatment services to those of limited means. The acceptabil-

ity of the patient to the group guaranteeing repayment of the loan and the almost prohibitive interest rates involved derogate from any benefit such a plan might confer.

The plan operating now successfully in Saskatchewan for some three and one-half years and being adapted in Alberta and in Ontario for commencement on January first next, is primarily designed as a health measure. It is a plan whereby a patient may receive the dental treatment he needs when he requires it and pay for it on a time basis without the necessity of a third party participation. The dentist is paid for his services monthly as the patient discharges his indebtedness and the cost to the patient is small—a nominal monthly service charge.

It would be hypocritical not to suggest that there is great value in this plan for the dentist. The administrative office of the plan is able to relieve the dentist of the necessity of servicing the account, thus conferring great savings and convenience on the dental office. Also the highly persuasive impetus to repayment of an impersonal organization having a relationship to other bodies concerned with credit standing should not be underestimated.

We believe that dentistry is most invulnerable to possible governmental intervention when it is, on its own initiative, providing a mechanism for extending its services as broadly as possible. To ignore the basic needs of a large segment of the population on the thesis that such attention predisposes to socialism is both unrealistic and untenable.

2. The Dental Service Corporation—U.S. Department of Health Education and Welfare, Public Health Service, 1958. Publication No. 570.

Dental Appointments in School Hours

"It is more important to have the children in school than accommodating dentists." With this profound statement a school superintendent in Western Canada recently made his contribution to in-

creasing the problem of finding sufficient time to care for the dental treatment needs of school children within his jurisdiction.

It was not many years ago that the per-

centage of office time provided for the treatment of elementary school children was entirely disproportionate to the percentage of the population they represent. Unfortunately, even today, pre-school and elementary school children are unable to receive attention in some offices.

Through better teaching methods, more extensive clinical presentations and the like, the profession has encouraged many practitioners to render prime attention to this age group. The importance of regular supervision and early treatment, when required, cannot be over-stated.

There are, however, only so many dentists. And there are only so many hours in a day. The practice of dentistry, through its meticulous attention to detail, through its confined and difficult area of operation, through its relationship with patients who are usually at least apprehensive, and through its inexorable appointment schedules, is arduous and exacting. When operating time is extended unreasonably beyond normal working hours, not only does the quality of the resulting treatment suffer but eventually a toll is taken of the dentist's physical endurance. No dentist, therefore, unless in an emergency, should be expected to extend his day beyond that which is considered reasonable.

The action by the school board in Victoria will not cause inconvenience to the dentists. It will simply permit them to

substitute adults for children. That some parents will be hard-pressed to obtain treatment services for their children is obvious.

Surely, in a so-called age of enlightenment, it is possible to arrange, effectively, for children to receive treatment without undue absence from school. This requires co-operative understanding both by the school and the dentist. The dentist should expend every effort to provide appointments for children which will result in a minimum of lost time. No child should be expected to miss vital school hours because of chronically poor appointment scheduling. The maximum amount of treatment compatible with quality of service and amenability of the child should be rendered to minimize the number of appointments required.

Following the appointment the child should receive from the dentist a card on which is stated the time of the appointment just completed in order that the school might make further inquiries of the parent should the amount of time taken by the child to return to school be unreasonably longer than that required.

Health is still a vital part of education. It is unfortunate when a school board adopts a policy which may tend to lessen the availability of essential dental care to the children over whom they have oversight.

An Association of Professions

A development in Michigan, of no little significance, will be watched with interest. The groundwork for the formation of a Michigan Association of Professions has been laid. Three representatives each from Law, Engineering, Architecture, Medicine, and Dentistry met recently with a public relations counsel to consider pertinent factors respecting the formation of such a body.

As the professions have many common interests, common ideals and common

problems, the development of such an association is possessed of great possibilities. Some of the basic areas of service would be education, legislation, public relations, ethics, and business techniques. The initiation of the proposal arose from the Michigan State Medical Society.

There have been many occasions in the past wherein it would have been desirable for a closer liaison with other professions. Such an association might well provide the means to better understanding and increased co-operation.

BOOK REVIEWS

Periodontology. Prepared by: Edgar D. Coolidge and Maynard K. Hine. Published by: The Macmillan Co. of Canada Ltd. Pages: 440 with illustrations. Price: \$8.50.

This book is particularly valuable to the dental practitioner not only because it has been written by men of outstanding ability in the field of Periodontics, but because it deals with the most important subject in the field of dental practice. It seems so obvious that the finest operative procedures must come to naught if the foundations collapse. This book should prove most helpful in arriving at a sane and practical diagnosis of our many dental problems.

The following subjects are dealt with at length, Oral and Dental Hygiene, Halitosis, Nutrition, Gingivitis and associated systemic disturbances, Periodontitis, Gingivosis, Periodontosis, Atrophy of the periodontal tissues, Occlusal Stress and necessary adjustments and the Use of the Toothbrush.

The authors point out wisely it is essential that the periodontist consider the importance of nutrition in the control of periodontal problems; nor is the concept of Selye overlooked, that is, that a variety of damaging influences such as trauma, severe cold, muscular fatigue, drug intoxication and nervous stimuli produce a syndrome of somatic changes. It is well known that the nasal mucosa swells in response to emotional stress so this reviewer believes that in the future much greater attention will be given to psychosomatic conditions than in the past. Much greater attention will be given also to a program of mouth hygiene and dental prophylaxis.

The authors state that the toothbrush is the most practical way to furnish the massage required to keep the gingival tissues free from infection. This reviewer has found the rubber stimulator or denticator more effective when the interdental spaces are large enough to permit of its use and for obvious reasons this rubber tip should be on a separate handle and not on the toothbrush handle as illustrated in this book.

It should be emphasized that the authors state, and rightly so, that the most beneficial time to brush the teeth is immediately after eating and

do not let us be carried away with TV and other advertising that some other plan is just as satisfactory.

In writing this book, the distinguished authors have checked the literature on the subject most thoroughly as evidenced by the 482 references.

This publication should prove a real acquisition to every dental office.

M. H. Garvin

The Interference Microscope in Biological Research. Prepared by: Arthur J. Hale, M.B., Ch.B., Ph.D. Published by: The Macmillan Co. of Canada Ltd. Pages: 114. Price: \$3.40.

The development of the phase contrast microscope provided the biologist with a useful tool for the study of the morphology of cells and tissues, particularly in the living state, and its advantages and limitations in this field are now well recognized.

Less well known, but of even wider application to biological problems is the interference microscope, the theory and practical application of which are described in considerable detail in this book. The interference microscope can be used for examination of cell morphology and it possesses certain advantages over the phase microscope for this purpose. For example, the haloes around refractile objects, which are a feature of the phase contrast image, are absent or diminished in the interference microscope. The adjustment and operation of the latter instrument are, however, considerably more complicated, and limitations on the type and size of specimen are more severe than with the phase contrast microscope.

The main value of the interference microscope is that it permits measurements to be made on quantities such as the mass of material in a tissue or cell, or even part of a cell such as the nucleus. In conjunction with other cytochemical and spectrophotometric techniques it is providing new information of importance in cytology and has a definite role to play in the elucidation of cellular processes.

To anyone who is using or contemplating using an interference microscope this book will be found

very useful in providing a description of the design and use of the instruments that are commercially available and a theoretical treatment of the basic measurements that can be made with it.

A. F. Howatson

The Gateway of Health. Prepared by: I. J. Berlove, D.D.S., M.D. Published by: Whittier Books, Inc. Pages: 148. Price: \$3.50.

Here is a well written, compact book by an eminently qualified author that will make interesting reading to dentist and layman alike. It embraces all facets of dentistry, oral health, and the relationship of the dental components to the body as a whole. Therein lies its weakness. Although written presumably for the layman, it is a book to be read once by him, and laid aside. Unquestionably its initial reading would benefit him greatly insofar as his general knowledge of dental health, dentistry and the dentist are concerned—but there is very little “meat” to cause him to re-read the book, or to use it as a reference. In fact, should he be desiring specific information regarding tooth-brushing, swelling of the jaw, toothache, pyorrhea, thumb-sucking, mouth breathing, post-operative care, or a host of other oral complaints with which he might be confront-

ed, he will find only one answer—to consult his dentist or physician. For the layman, “The Gateway to Health” is unattractively and inadequately illustrated.

BUT—Here is a book for which the reviewer would gladly have sacrificed an upper canine in his first year at dental college. It would have given him a general perspective of the profession of dentistry that has never been set in print more effectively. With very little enlargement, and a slight change in approach, this text could be the basis for a first year dental subject called “Dentistry” comprising 8 lectures, and giving the student an introduction and groundwork for the ensuing graduate years. A revised edition of this publication should be on the first year list of required books for every dental college.

Again, with very little revision in a different direction, “Gateway” could become a valuable text to fit into the subject of Health, in a High School Curriculum.

Dr. Berlove is to be heartily commended for this excellent effort, and it is to be hoped that the book is not to be allowed to gather dust in the bookseller's shops in its present format.

Robert Reid

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

Additions

BERLOVE, I. J.: The gateway to health; interrelationship of the mouth, teeth and body. New York, Whittier Books, Inc., 1958. 148 p. illus. \$3.50.

BLASS, J. L.: Motivating patients for more effective dental service. Montreal, Lip-pincott, 1958. 176 p. illus. \$6.50.

BRAUER, DEMERITT, LINDAHL, HIGLEY, MASSLER & SCHOUR: Dentistry for

children, 4th ed. Toronto, McGraw-Hill, The Blakiston Div., 1958, 492 p. illus. \$11.55.

DURBECK, W. E.: The impacted lower third molar. 2nd ed. Brooklyn Dental Items of Interest, 1957. 188 p. illus. \$5.00

ELWELL, K. R., & EASLICK, K. A.: Classification and appraisal of objections to fluoridation. Ann Arbor, University of Michigan, June 1957. 149 p. Mimeo.

THE ASSOCIATION

Annual F. D. I. Meeting at Brussels

Dr. Thure Brandrup-Wognsen of Stockholm was re-elected president of the International Dental Federation at its 46th Annual Meeting, Aug. 27th to Sept. 3 in Brussels. The next F.D.I. annual meeting will be held at New York in September 1959.

Some two years ago a Special Committee on Revision was set up consisting of Dr. Harold Hillenbraud of Chicago, Chairman, Dr. Hans Friekofec of Zurich and Dr. Knut Gard of Oslo. This committee presented a complete revision of the F.D.I. Articles and Regulations which was adopted. This revision is designed to make possible more effective and economical administration.

Dr. Don W. Gullett of Toronto was elected to the Council of the F.D.I.

Clearly indicated at the meeting was the increasing importance of stable organization for dentistry at the international level. Like most organizations increasing costs together with compelling increased activities has produced financial difficulties. The annual contributions by national associations sustain the frame-work of the F.D.I. administration but the membership fees of the individual Supporting Members make accomplishments possible.

In addition to the necessary work in their respective fields the professions through their international organizations are making a worth-while contribution to the common good.

Charlottetown Council Approves Fluoridation

The city council of Charlottetown, P.E.I. has unanimously approved the principle of fluoridating its municipal water supply. This action is considered a major breakthrough for the proponents of fluoridation in the Maritimes.

Bitter battles have been fought in city council in the past, but this month a reso-

lution calling for fluoridation was passed unanimously. The resolution reads, in part, as follows:

" the City Council hereby recommend to the Commission of Sewers and Water Supply to implement this recommendation at an early date. And if it is found that we do not have the enabling legislation that the Provincial Government be urged to enact such legislation."

\$300,000 Pharmacy Centre Planned

A new national professional "Centre of Pharmacy" to be known as The Canadian Institute of Pharmacy is the target in an intensive two months' building fund undertaken by Canada's 9,000 pharmacists. The campaign is under the auspices of the Canadian Pharmaceutical Association.

Plans for the building, to be located in Toronto, call for conference rooms, a Museum of Pharmacy, a library of pharmaceutical research, and office space for the Association and other pharmaceutical groups. The building is to be owned by the Canadian Pharmaceutical Association.

International Congress in Chile

Through the Canadian Ambassador at Santiago, a formal invitation has been extended to Canadian dentists to participate in the Fourth International Congress of Odontology. The Congress is scheduled for Nov. 16 to 20, 1958, at Santiago, Chile.

Information is available through the Comité Organizador y Ejecutivo, Casilla 2575, Santiago, Chile.

Journal Shortage - August Issue

Copies of the August, 1958, issue of the Journal of the Canadian Dental Association are in very short supply in our Library.

It would be appreciated if members would mail to Headquarters copies of this issue if they do not plan to keep them.

New Radiation Booklet

"A Practical Manual on the Medical and Dental Use of X-Rays with Control of Radiation Hazards" has recently been published under sponsorship of the American College of Radiology and the American Dental Association.

This colourful booklet of about 30 pages is divided into nine sections, with general and specific observations. One section is concerned with dental radiography. Copies will be made available at C. D. A. Headquarters on request — 25 cents each.

W.H.O. Fluoridation Report

Copies will be available at C. D. A. Headquarters of the recently published First Report of the Expert Committee on Fluoridation of the World Health Organization. Cost will be 25 cents each.

Canadian Dental Association Retirement Savings Plan

This Plan, specially designed as a medium for making deductible contributions for Retirement, has now been operating almost a year, and it is now possible to clarify a few points which were left in some doubt at its commencement.

Although the legislation regarding Registered Retirement Savings Plans requires that there be no provision for cash withdrawals except on death, it is possible to de-register, in which case any amounts paid out are subject to a withholding tax of 25%. This is a minimum tax and the full amount withdrawn must be added to any other income during that year, to ascertain the exact tax payable, so more than 25% may have to be paid on the amount withdrawn, but never less. The purpose of the legislation and the Plan is to encourage savings for retirement but it is possible for a participant to withdraw in an emergency. The basis of paying withdrawals will be on the Unit Value at

the next quarterly Valuation Date following receipt of the request, provided at least 30 days notice is given before such Valuation Date.

In the event of death of a participant, his estate will receive the full amount standing to his credit, less the withholding tax of 15%. No other income tax is payable on refunds on death, but the full amount of the refund is aggregated with the remainder of the estate for Estate Tax purposes. The basis of refund on death will be the Unit Values on the Quarterly Valuation Date next following the date of death.

In order to make the Plan as flexible as possible, the Administration Office has agreed to accept allocation instructions with each deposit. Thus, for example, a participant may send in a contribution of \$500.00 and ask for it to be equally divided between Corporate Bonds and Common Stocks and then later send another \$500.00 with a request for all this to go into the Common Stock Fund. If any deposit is received at the Plan Administration Office without any specific allocation, it will be distributed in accordance with the last previous instructions received.

If the plan is to be judged on the basis of (1) Security, (2) Efficiency of Management, (3) Flexibility and (4) Economy of Operation, then there can be little doubt that it is unsurpassed. It is hoped that many more members will take advantage of the Plan in making provision for retirement, and applications or additional information can be obtained by writing to:

C.D.A. RETIREMENT SAVINGS PLAN
2249 Yonge St.,
TORONTO 7, ONTARIO
or Phone HU(dson) 1-5731.

Participants as at December 31st 1958 may deduct any contributions made by February 15, 1959 in calculating their Tax liability for 1958.

THE CORPS

Brig. E. M. Wansbrough Retires

Army Headquarters has announced the retirement of Brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., D.D.S., Q.H.D.S., F.I.C.D., F.A.C.D., from the R.C.D.C.(R) on November 1, 1958.

Director General of Dental Services for the Armed Forces since 1946, Brigadier Wansbrough was born in Amaranth, Ontario, and received his secondary education at Grand Valley and Orangeville High School graduating in dentistry from the Royal College of Dental Surgeons of Ontario in 1923. He then practised his profession in Shelburne, Ontario.

A veteran of two world wars, he was awarded the Military Medal for gallantry in action in the Great War, 1914-18, while serving as a machine gunner.

In the interval between the First and Second World Wars, he served as an officer in the Lorne Scots, a militia unit.

Appointed to the Canadian Dental Corps in November 1939, Brigadier Wansbrough was Command Dental Officer of No. 1 Training Command, R.C.A.F., Toronto, until his departure for overseas in 1942. He served as Assistant Director of Dental Services in the United Kingdom for the Royal Canadian Air Force until 1945.

After his return to Canada he was appointed Deputy Director of Dental Services (Air) at National Defence Headquarters and in 1946 assumed the appointment as Director General of Dental Services. During his lengthy military career, Brigadier Wansbrough has served in the United Kingdom, Continental Europe, the Middle East and the Far East. He was made an Officer of the British Empire in 1945 and appointed Queen's Honorary Dental Surgeon in 1953. He is a Fellow of the American College of Dentists and International College of Dentists.

The corps wishes Brigadier and Mrs. Wansbrough every success in civilian life.

Brig. K. M. Baird Now D.G.D.S.

Colonel K. M. Baird, O.B.E., C.D., D.D.S., Q.H.D.S., F.I.C.D., was promoted to the rank Brigadier and appointed Director General of Dental Services for the Armed Forces on November 1, 1958.

Born in Ottawa, Brigadier Baird was educated at Nepean High School, Lisgar Collegiate, the University of Toronto, Faculty of Dentistry and Forsyth Infirmary, Boston, Mass.

He joined the Canadian Army in November 1939 and proceeded overseas in 1941. During the war he served in dental appointments in the United Kingdom and commanded No. 9 Dental Company in Northwest Europe where he was made an Officer of the Most Excellent Order of the British Empire and was Mentioned-in-Despatches.

Since the war he has served in Ottawa, Halifax and Trenton. From 1947 until 1952 he commanded the Royal Canadian Dental Corps School.

He is a fellow of the International College of Dentists and in June of this year was appointed an Honorary Dental Surgeon to Her Majesty, Queen Elizabeth II.

Col. G. B. Shillington Now Deputy-Director

On November 1st Colonel G. B. Shillington, C.D., D.D.S., B.Sc. (Dent), Q.H.D.S., F.I.C.D. assumed the appointment of Deputy Director General of Dental Services.

Colonel Shillington was born in Blenheim, Ont. and was graduated in dentistry from the University of Toronto, where he also spent two years in post-graduate study. He was commissioned in the Canadian Dental Corps in 1939 and during the war served overseas in the United Kingdom and North Africa. In April 1950 he was appointed Deputy Director of Dental Services at Army Headquarters and later commanded The R.C.D.C. School in Ottawa. He was Commanding Officer, 11 Coy R.C.D.C., Edmonton from August 1954 to September 1957. Until his present appointment he was Senior Consultant at the Directorate of Dental Services.

Colonel Shillington is a fellow of the International College of Dentists and was appointed an Honorary Dental Surgeon to Her Majesty, Queen Elizabeth II in June of this year.

Lt.-Col. Sinclair to Eastern Command

Army Headquarters announced the appointment of Lt.-Col. W. M. Sinclair of Halifax as Command Dental Officer of Eastern Command and Commanding Officer No. 12 Coy R.C.D.C. (R) effective October 1, 1958.

Lt.-Col. Sinclair was born in San Luis Potosi, Mexico. His early professional education was received in London, England, where he received the degree of L.D.S., R.C.S., Eng. in 1930 and B.D.S., in 1931 from the University of London. He served on the staffs of the Eastman Dental Clinic, London, England, and the Dundee Dental Infirmary.

He served in the Canadian Forces from 1940, initially with the Irish Regt. of Canada transferring to the Canadian Dental Corps in 1943 where he was employed in the Halifax area for the duration of the war. Since the war he has served in Central and Eastern Commands, as well as being an instructor at The R.C.D.C. School and Commanding Officer of 25 C.F.D.U. in Korea.

Brig. Wansbrough Returns from Europe

Brigadier E. M. Wansbrough returned in September from a visit to the 4 Canadian Infantry Brigade, No. 35 Field Dental Unit, 1 Air Division, R.C.A.F. and attended the Annual Meeting of the Federation Dentaire Internationale in Brussels.

Officers Present Clinics at E.O.D.A. Meeting

Lt.-Col. G. C. Evans and Major L. G. Craigie of The R.C.D.C. School and Major A. G. Andrews of Rockcliffe presented clinics at the Eastern Ontario Dental Association Convention held in Kingston, Ontario in September.

THE PROVINCES

ALBERTA

C.S.D.C. Chapter Formed

More than 60 Alberta dentists attended the inaugural meeting of the Canadian Society of Dentistry for Children, Alberta chapter, at the University of Alberta recently.

A number of table clinics were presented by Edmonton dentists, and Dr. J. C. Muhler, associate professor, University of Indiana, was guest lecturer. Dr. Muhler spoke on the advantages of using stannous fluoride instead of sodium fluoride as a preventive of caries. A single application of eight per cent stannous fluoride is more than twice as effective as the four applications of sodium fluoride now used for children, he said.

A single application of 10 per cent stannous fluoride significantly reduces dental decay in adults, he noted. Any decayed area on a tooth becomes pigmented after the application, but undamaged tooth surfaces show no colour change.

Dr. Muhler also discussed recent research

General Efficiency Competition

The results of the General Efficiency Competition of the Royal Canadian Dental Corps (Militia) for the training year 1957-58 are announced as follows:

No. 50 Dental Unit Canadian Army (Militia) with headquarters at Halifax, N.S., Commanding Officer, Lt.-Col. F. C. Fennell was judged the winner of the Competition and awarded the Moore Trophy for the second successive year.

No. 60 Dental Unit Canadian Army (Militia) with headquarters at Edmonton, Alberta, Commanding Officer, Lt.-Col. A. D. Fee was judged runner-up and awarded the Trelford Trophy.

No. 61 Dental Unit Canadian Army (Militia) with headquarters at Vancouver, B.C., Commanding Officer, Lt.-Col. I. G. MacKenzie was awarded the Saskatchewan Dental Association Memorial Trophy as the unit which made the most progress in general efficiency during the training year.

into the relationship of the endocrine glands to dental caries.

Lethbridge and District Dental Society

The Lethbridge and District Dental Society held its annual fall golf tournament at Waterton on Monday, September 15th. It was a lovely day and the course was in excellent shape. Following the golf an excellent dinner was enjoyed at the Kootenai Lodge Restaurant.

The golf trophy was won by Dr. Van Christou with second prize going to Dr. B. Burgman of Blairmore. Mrs. D. A. Rylands won the ladies' prize.

The newly formed Allied Arts Council has as its president Dr. Van Christou of Lethbridge. This council has the job of correlating all the activities of different arts and crafts in the city and district. It is now working for an Arts Centre for Lethbridge.

This is a big task and our Dental Society feels proud that one of our members has been chosen to head up this important work.

D.A.R.

BRITISH COLUMBIA

Vancouver and District Dental Society

Dr. Max Nacht, the new president, occupied the chair at the season's first meeting in the Banquet Room of the Hotel Vancouver on October 7.

An inspiring talk was given by Warden Hugh Christie of Oakalla Prison emphasizing the need for generous support of the Community Chest. He had a different approach to the matter, stating that if voluntary contributions were not forthcoming, the various projects would eventually have to be looked after by taxation, and everyone would pay anyway.

Dr. D. A. Anderson introduced the lecturer, Dr. Saul Schluger, Professor of Periodontics at the University of Washington School of Dentistry, a foremost authority in his field and an outstanding speaker. The evening topic was treatment methodology of the periodontal lesion.

Early scaling, curettage and home treatment were stressed for most cases. Simple gingivectomy was recommended to remove unsupported tissue, and thus eliminate periodontal pockets.

Further surgical procedures for more complicated cases were outlined, using the rotary abrasive or the electronic scalpel. "Before and after" slides were shown depicting severe cases and their correction.

Dr. Schluger laid emphasis on the main object of periodontal treatment: to achieve correct form of the soft tissues surrounding the teeth.

Dental Wives Form New Group

Three laudable objectives have been selected by the recently-organized Vancouver and District Dental Wives Association. They are:

1. To promote sociability among the members.
2. To stimulate education and interest among members.
3. To promote community awareness of dental service and its value to the community.

The first two objectives appear to be the stepping stones to number three, which is a matter of paramount importance.

Mrs. John Carefoot is president of the group and she has a capable executive who will convene the Ladies' Program at the B.C.D.A. convention this year.

Course for Dental Assistants

A class limited to 40, and composed of members of the B.C. Dental Assistants' Association, commenced a course of study at



DR. MAX NACHT

President, Vancouver and District Dental Society

the Vancouver Night Schools on September 16. The course has been endorsed by the College of Dental Surgeons who will grant certificates to successful students at the conclusion of the six months of training.

Seventeen lecturers supplied by the Vancouver and District Dental Society will give instruction in office management, chair assistance, fees and collections, dental hygiene, paedodontics and other subjects.

In last year's class thirty-two young ladies passed the course and received diplomas.
D.H.M.

MANITOBA

Dr. E. N. Cole Awarded A.D.T.A. Fellowship

Dr. Edgar N. Cole of Boissevain, Manitoba, and formerly of Portage la Prairie, has been announced winner of the first American Dental Trade Association Fellowship for Graduate Study.

He will pursue a degree course in anaesthesia at the University of Pittsburgh and plans to return to Canada to practice and teach.

The \$2,500 Fellowship will be awarded annually to a graduate dentist for the purpose of continuing his education in preparation for a career as a teacher of dentistry. Dr. Cole was picked from the list of applicants by the Scholarship Committee of the Fund for Dental Educations, Inc., which is the administrator of the Fellowship.

Winnipeg Dental Society

The Golf Section of the Winnipeg Dental Society concluded another successful year with a round of golf and a presentation dinner at the Glendale Country Club on September 10th. The Golf Chairman, Dr. Marvin Wolch once again picked a perfect day weatherwise and a large turn-out of over fifty members resulted.

Dr. Wolch and the weatherman gave us ideal conditions on each of the five monthly games and even the fair-weather golfers had no excuse for not taking a half-day away from the office. Unfortunately the scores very seldom reflected the weather conditions, but the companionship more than made up for the odd lost ball and missed putt. The plan of playing each month at a different course made the games much more interesting and Dr. Wolch and his committee of Drs. Dick Bird and Len Kahane are to be congratulated in arranging all the details so competently.

At the wind-up dinner everybody who even looked like a golfer received a prize, thanks mainly to our supply houses and laboratories who once again contributed generously to this section. There were also some members who actually played good golf and they were rewarded with the following cups and trophies: Ash Temple Champion Cup—Dr. O. Hall; Denco Rose Bowl—Dr. L. Portnoy; Canadian Linen Company Trophy — Mr. A. Tevendale.

Manitoba Dental Association

The Manitoba Dental Association acted as hosts at a luncheon to honour the first class of the Faculty of Dentistry of the University of Manitoba, on September 8th, 1958, the first day of classes in the new College. Guests of honour at the luncheon along with the 22 students were: Mr. Duff Roblin, Premier of Manitoba, Dr. Victor Sifton, Chancellor of the University of Manitoba, Dr. Hugh H. Saunderson, President of the University of Manitoba, Dr. George Johnson, Minister of Public Health, Mr. Stuart McLean, Minister of Education, and other leaders in the fields of health and education in the province.

The President of the Association, Dr. T. J. Cooke, acted as Chairman. He called upon Premier Roblin and President Saunderson both of whom spoke on the need for the Fac-

ulty. Dr. J. W. Neilson, Dean of the Faculty of Dentistry then introduced the individual students and also the individual members of the academic staff. The principal speaker, Professor I. Maclaren Thompson, Head of the Department of Anatomy of the University of Manitoba, was introduced by Dr. Lennox G. Bell, Dean of the Faculty of Medicine. In an excellent address, Dr. Thompson spoke of some of the problems confronting a new professional faculty, both at the present and in the past. Dr. Thompson felt that present day conditions were much more advantageous than those of the past for the development of proper professional and educational institutions.

It might be added that the first formal lecture of the new Faculty was given on Monday morning, September 8th, by Dr. M. H. Garvin, whose honours both in Dentistry and outside it are many. Dr. Garvin spoke on "An Introduction to the History of Dentistry", and by his scholarly, dignified and considered remarks, he made a deep impression upon the members of this first class, who four years hence will be taking their places in the profession as the first dental graduates of the University of Manitoba.

J.P.B.

NOVA SCOTIA

Dalhousie Holds Special Convocation to Commemorate Opening of New Faculty

A Special Convocation took place in the Arts and Administration Building of the University, on September 25th when the following were awarded the degree Doctor of Laws (Honoris Causa). The Official Opening and Dedication Ceremonies at the entrance to the new Dentistry Building. The building was officially opened by the Lieutenant-Governor of the Province of Nova Scotia, the Honourable Major General E. C. Plow. Following the official opening, the guests were invited to tour the building, and a reception was held in the Dentistry Building. That evening, the Nova Scotia Dental Association was host to the members of the dental profession in attendance and to special guests at a reception, dinner and dance at the Nova Scotian Hotel. The following day, the University arranged a program which was given by Dr. John H. Barr, Professor of Oral Diagnosis and Roentgenology at Tufts University in Boston.

As well as a large and diverse representation from the dental profession in the four Atlantic Provinces, we were honoured by the



DALHOUSIE AWARDS HONORARY DEGREES

l. to r. Dr. J. D. McLean, Dean of the Faculty of Dentistry; Dr. Don W. Gullett, Secretary of the Canadian Dental Association; Dr. Ernest Charron, Dean Emeritus of the Faculty of Dentistry of the University of Montreal; Dr. A. E. Kerr, President of Dalhousie University; Dr. Philip E. Blackerby, Jr.; and Dr. A. J. Coughlan of Saint John, New Brunswick.

presence of Dean Roy G. Ellis of the Faculty of Dentistry of the University of Toronto, Chairman of the Council on Dental Education of the Canadian Dental Association; Dean McCutcheon of the Faculty of Dentistry of McGill University; Dr. A. G. Racey, President of the Canadian Dental Association; and Dr. Wesley Langmaid of the Board of Governors of the Canadian Dental Association—also Dr. G. M. Dewis, President-elect of the Canadian Dental Association.

The Chairman for the dinner tendered by the Nova Scotia Dental Association was the President, Dr. Moses Claener, of Sydney, Nova Scotia. There were, in addition, official representatives of other universities in the Atlantic Provinces, and Lt. Col. Sinclair, the representative of the Royal Canadian Dental Corps.

ONTARIO

Eastern Ontario Dental Association

The three day Eastern Ontario Dental Association Convention held in the La Salle Hotel, Kingston, commencing September 15th, opened with a presentation of "The Plough and the Stars" by the Domino Theatre Players, and a reception for the early arrivals.

Formal registration took place in the morning and over 100 dentists attended.

The first lecture was conducted by the London Orthodontic Study Club. The subject was "Interceptive Orthodontics for General Practitioners". The group dealt with the fact that among his many responsibilities

the general practitioner must include his obligations in the field of interceptive or preventive orthodontics. In most cases he is the first responsible person to see a child patient at the critical stage when incipient orthodontic situations are developing.

The group pointed out that the general practitioner may choose to refer the case to someone better acquainted with the problems, but the onus of basic diagnosis rests with the general practitioner. The general practitioners' responsibilities to the patient were advised as to recognize simple cases and treat if possible and to refer to a specialist at an early stage, cases which are clearly beyond the scope of general practice. His obligations to the orthodontist were to refer cases early enough for treatment to be started at the proper age and to assist him in preventing cases from becoming worse before full treatment is started.

Those attending the lecture were told that the aims of a diagnosis were to differentiate between cases for general practitioners and for the orthodontist; the prevention of the need for future orthodontic treatment, and the prevention of complications in cases requiring future orthodontic treatment. The methods used to achieve these aims were described as clinical examination, history, X-rays, study models and consultation with a specialist.

Those conducting the lecture were Dr. Peter E. Currie, space problems; Dr. J. Bruce Taylor, diagnosis and treatment planning; Dr. James A. Guest, habits; Dr. John A. Reid, crossbites and versions; Dr. J. Wainwright, techniques.

Following the main lecture of the morning, nine table clinics were held. These were: "Drugs of Choice in Dental Practice", Major A. G. Andrews, Ottawa; "Drugs in Dentistry", Dr. A. Antoni, Toronto; "Individual Tooth Movement", Dr. M. M. Derrick, Ottawa; "Fundamentals of Partial Denture Design", Lt. Col. G. C. Evans; "A Method of Inserting Post Into Root for the Reception of a Crown", Dr. Evan H. Jones, Ottawa; "Involvements of the Maxillary Sinus", Dr. H. E. McIntosh, Ottawa; "Construction of Characterized Dentures" (film), Dr. Lorne MacLachlan and E. Vowles, Ottawa; and "Temporary Splinting in the Treatment of Periodontia", Dr. J. A. Whyte, Kingston.

Luncheon at noon was addressed by Dr. J. A. Corry, vice-principal and dean of law, Queen's University. Two lectures were scheduled for the afternoon session, one was given by Dr. A. A. Yurkstas, Tufts University, Boston, Mass., and the second by Maj. L. G. Craige.

While the dentists were busy at lectures, and clinics, their wives were entertained at

the home of Mrs. J. C. W. Broom of Kingston.

Dr. A. Slone of Ottawa, was elected president of the Eastern Ontario Dental Association, succeeding Dr. Harry A. Stewart of Kingston. Dr. John D. Lyon of Kingston, was elected vice-president and Dr. C. Bugden of Ottawa, secretary-treasurer.

Past president mugs were presented to Dr. G. V. Tario, Pembroke, Dr. E. B. Sparks and Dr. J. C. W. Broom, both of Kingston.

Dr. W. L. Hutton Retires

Dr. W. L. Hutton, Brantford's medical officer of health since 1919 and the only non-dentist Honorary Member of the Canadian Dental Association will retire on November 30th. Dr. Hutton was the first medical health officer in the world to recommend fluoridation to his community.

Long recognized as a leader among medical officers in the public health service in Canada, Dr. Hutton has been a pioneer in many respects. Through his efforts Brantford in 1945 became the first in Canada to fluoridate its water.

Thunder Bay Dental Association

The Thunder Bay Dental Association held its annual fall golf tournament, Friday, September 19th, at the Port Arthur Golf and Country Club, with eleven would be Hogans and Sneads, ripping up the fairways and greens. The scores turned in would have been excellent for 18 holes, except that only nine were played.

First prize was taken by belting Bob Stinson, coming in with a 48, and breathing right down his neck was Geraldton's Stew Dewar with a 49. A special award went out to Sid Smith as the most honest golfer of the day. Sid reported back with 85, and rumour has it that his score was higher than that, but he got tired counting.

Following the golfing, several more of the members turned out for an excellent dinner and an evening of good fellowship, on the 19th green.

J.A.S.

Niagara Peninsular Dental Association

The first regular meeting of the Niagara Peninsular Dental Association, was held in St. Catharines, Friday, October 10th, 1958.

Dr. Wesley J. Dunn and Mr. W. E. Jackson of Toronto were present. Dr. Dunn and Mr. Jackson jointly outlined the proposed operation of the post payment plan for Dental Services and the Welfare Plan being inaugurated on January 1, 1958. Their presentation held the extreme interest of the large turn out of members.

QUEBEC

Montreal Dental Club

The Annual Fall Golf Tournament of the Montreal Dental Club was held under a bright sun and blue skies at Summerlea Golf Club on Friday, Sept. 26th.

Dr. A. J. Schutz led the field with a 74 to win first low gross. Second low gross was taken by Club President Dr. R. F. Harvey. First low net was won by Dr. P. Ramsey, and second low net by Dr. R. Dohn. Dr. A. Mitchell won the Senior Members' Trophy, and Dr. D. Richardson triumphed on the sealed hole.

Prizes were awarded following an excellent evening dinner in the club house.

W.D.S.

SASKATCHEWAN

University Hospital Dental Staff Meeting

The monthly meeting of the University Hospital Dental Staff was addressed by Dr. A. B. MacDonell, a radiologist, on the subject "Radiation Hazards and Protection".

Under hazards he referred to leukemia, sterility and the cumulative genetic effects. During pregnancy it is most important that the foetus should be spared radiation.

To assist in the solution of the hazards he mentioned, filtration, higher voltages, increased target distance and cone down. To protect the dentist he urged that the dentist remain as far as possible from the radiation area.

The address of Dr. MacDonell was full of interest and of valuable information to the dentists.

L.D.H.

Saskatchewan Dental Association Convention Highlights

The following were guests of honour at the recently concluded convention of the Saskatchewan Dental Association and were presented with Life Memberships for having served the profession for fifty years or more:—Dr. A. J. Brett, Regina; Dr. H. A. Chant, Foam Lake; Dr. G. E. DeWitt, Regina; Dr. Chas. Dixon, Regina; Dr. F. R. Graham, Estevan; Dr. J. C. King, Humboldt; Dr. T. I. Robb, Regina, and Dr. C. H. Weick-er, Regina.

Dr. John W. Neilson, Dean of the Faculty of Dentistry, University of Manitoba, as guest speaker, reviewed the shortcomings of the high schools and dental profession with regards to the availability of suitable dental students. The new Faculty of Dentistry in Winnipeg, received 68 applications. They desired 30 pupils but found only 26 qualified to

enter the school. He maintained that the end product of the high schools was not as good as it should be. He also admonished the dental profession as well as the high school authorities to encourage the students to enter Dentistry. Dr. Neilson referred to the problems presented in obtaining suitable faculty members. They have four men on full-time bursaries who will return to the staff. He stated that the recruitment of faculty members was at present being considered by the C.D.A.

Dr. Joseph A. Ludwig, Plastic and Oral Surgeon in Winnipeg was a popular clinician on the subject "Oral Surgery for the General Practitioner". All present considered that his clinics were of very practical interest and of importance to the general practitioner. All felt that the selection of Dr. Ludwig, as clinician, was a very happy choice.

The Honourable W. Erb, Minister of Public Health, Province of Saskatchewan, as guest speaker, referred to the concern regarding the shortage of dental personnel and the difficulty in recruiting men of high standards for dentistry in competition with industry. He stated that bursaries and loans were being considered by his department to induce students to return to this province. He emphasized his impression of the desire and efforts of the profession to provide optimum service to the public and to maintain a state of good health.

Reports of various provincial committees were received and reviewed.

The Saskatchewan Dental Association was dissolved and the duties were assumed by the Saskatchewan College of Dental Surgeons. This subject was hotly debated but was finally passed by a large majority. The Council of the College agreed to this change and plan to increase the representation from five to seven as a result of the increased responsibilities.

Bouquets were tendered to Dr. Ben Bookhalter, Dr. F. T. Wihak, Dr. D. M. Parker, Dr. C. M. Bolen, and Dr. H. A. Kinzel, the members of the S.D.A. executive and the committees in charge, for the excellence of service rendered the profession. Particular mention should be made of the excellent leadership given by the President, Dr. Ben Bookhalter. He gave unstintingly of his time and demonstrated qualities of leadership during his tenure of service as President.

A Plaque for Valour was presented to Dr. M. Miller of Moose Jaw. Dr. Miller was awarded this plaque in recognition of his saving the life of Linda Lockwood at Buffalo Pound Lake, on August 11, 1958. Dr. Miller swam from 400 to 500 yards to save the life of this girl and then returned to help a man who had attempted to save the girl.

L.D.H.

GENERAL NEWS

Dentists Outlive Others by Two Years, A.D.A. Report Shows

In 1957, the average age at death for U.S. dentists was 69.1, about two years more than the figure for the general white male population over 25, according to a report issued by the A.D.A. Bureau of Economic Research and Statistics. The report, concerned with the causes of deaths among dentists last year, said diseases of the circulatory system, including heart conditions, accounted for 56.1 per cent of the deaths. The figure was nearly four times as much as that for the second-ranking cause, neoplasms or cancer. Malignancies accounted for 15 per cent of the deaths. The third leading cause of death, with a rate of 10.7 per cent, involved diseases of the nervous system and sense organs. Fol-

lowing, in order, were accidents, poisonings and violence, accounting for 5.2 per cent of the deaths; diseases of the digestive system, 3.9 per cent; diseases of the respiratory system, 3.2 per cent; diseases of the genitourinary system, 2.2 per cent; allergic, endocrine, metabolic and nutritional diseases, 1.7 per cent; senility and ill-defined conditions, 1 per cent, and infective and parasitic diseases, .6 per cent. Other conditions, each listed as .1 per cent, were mental, psychoneurotic and personality disorders; diseases of the blood and blood-forming organs; diseases of the bones and organs of movement, and congenital malformations. The figures were based on reports from 36 state departments of health and covered 1,157 deaths or approximately 67 per cent of all dentists who died in 1957.

IN MEMORIAM

Robert Sidney Wilby—Dr. Robert Sidney Wilby of the Magdalen Islands, died recently in the Notre Dame De La Garde Hospital, Grindstone, following a short illness.

Born at Bridlington, Yorkshire, England, he had resided at Grindstone for the past 28 years as a dental surgeon. Dr. Wilby had practised his profession for more than 50 years.

A veteran of the First World War, Dr. Wilby served with the Canadian Dental Corps with the rank of sergeant. Prior to going to the Magdalen Islands, he had resided for many years at Fredericton, where he was a member of the Fredericton branch of the Canadian Legion.

Surviving are his wife, Lillian; one son, Robert; two daughters, Mrs. N. Montagnon, and Mrs. D. Briley; one brother, Cyril; four grandchildren and two nieces.

Willard McConnell Box—Dr. Willard McConnell Box of Toronto, died on October 8, 1958. He was 63.

Dr. Box was born at Calabogie, Ontario in 1895 and received his early education at Renfrew. He graduated from the R.C.D.S. in 1920 and practised in Kitchener from 1920 to 1922 and in Toronto from 1922 to 1958.

He was a member of the Dental Club

Team that won the Allan Cup in 1917. He was a committee member of the 107th Troop of Boy Scouts. Dr. Box was one time Progressive Conservative candidate for Spadina and in 1949 unsuccessfully opposed David Croll for the Spadina Commons seat. In World War I—1917-18, he served as a sergeant on the Canadian Army Dental Corps.

Surviving are his wife, Helen Evelyn, and one daughter, Carolyn.

William Garvey Wallace — Dr. William Garvey Wallace of Moose Jaw, Saskatchewan, died on September 8th. He was 80.

Dr. Wallace was born in Ohio and graduated in dentistry at Ohio State University. He practised in the United States before going to Moose Jaw in 1910. He moved to Lafleche in 1913 and practised there until he moved to Mossbank in 1929. He carried on his profession in Mossbank until his office and equipment was destroyed by fire in 1954. A year later he resumed his practice at Scout Lake.

He was a member of the Mossbank Masonic Lodge.

Predeceased by his wife in 1951, he is survived by two sisters, Mrs. N. Batch and Margaret, both in Ohio, and one brother, Hallatt, in California.

Garth H. Merkeley—Dr. Garth H. Merkeley, of Winnipeg, Manitoba, died September 23, 1958 after a long illness. He was 43.

Dr. Merkeley was born in Winnipeg and received his early education there. He later attended the University of Minnesota, graduating in dentistry in 1939. The following year he did post graduate work at Dalhousie University and then returned to Winnipeg where he practised for a short time before joining the Royal Canadian Dental Corps.

He served as a captain with the R.C.D.C. in England and north-west Europe, until 1946 when he returned to Winnipeg to resume his practice.

Dr. Merkeley was a member of the Manitoba and Canadian Dental Associations and at the time of his death was on the executive of the Winnipeg Dental Society. He was also an active member of the Wildwood Club executive and belonged to the Winnipeg Rotary Club.

He is survived by his wife, Audrey Myrtle; two sons, Garth Jr., and John; a daughter, Michaelanne; his father, Dr. H. J. Merkeley, Winnipeg, a past president of the Canadian Dental Association; two brothers, Dr. Norman, Winnipeg, Dr. Donald, Lewiston, Idaho, and a sister, Mrs. Lois Youngson of Vancouver.

Clarence Stirtan—Dr. Clarence Stirtan of South Mountain, Ontario, died on September 26th, 1958. He was 59.

Dr. Stirtan was born in 1899 at Spencerville, Ontario and received his early education there. He graduated from the R.C.D.S. in 1924 and practised at South Mountain up to 1958.

From 1930 to 1940 he was Secretary Treasurer of the Mountain Agricultural Society. In World War II he was Captain in the Canadian Dental Corps., C.A.S.F.

Surviving are his wife, Violet, three sisters, Mrs. J. Martin, Mrs. M. Black, and Mrs. T. Todd, also a brother, Everett.

J. A. Bursten—Dr. J. A. Bursten of Carpathia Road, Winnipeg, died August 3rd at Winnipeg Beach, he was 60.

Born in Russia, he went to Winnipeg in 1912, and later took his dentistry degree at the University of Alberta before beginning his practice in Winnipeg.

He is survived by his wife Anne, one son, Leslie; two daughters, Mrs. G. C. Pollock and Mrs. Z. S. Katz; his mother, Rebecca; one brother, Morris; four sisters, Mrs. F. Kussin, Mrs. A. Filkow, Mrs. M. Bernstein and Mrs. S. Roitman, and five grandchildren.

George Cooper Squire—Dr. George Cooper Squire of London, Ontario, died on August 30, 1958.

He was born at Glencoe, Ontario, in 1896 and received his early education there. Dr. Squire graduated from the Faculty of Dentistry, University of Toronto in 1927 and practised in London from 1927 to 1958. He also received certification in Periodontics in 1945.

Dr. Squire was treasurer of the London Dental Society in 1935. He was a school dentist in London for nearly 30 years, and was a member of Tuscan Masonic Lodge. In 1918 he served with the 63rd Battery (Artillery). In his church, he was a former Clerk of Session and was a member of the Board of Stewards at the time of his death.

Surviving are his wife and son Warren.

Ernest Manning Doyle—Dr. Ernest Manning Doyle of Calgary, Alberta, died in the General Hospital on September 7th at the age of 79.

Dr. Doyle was born in Dunkirk, Ontario and practised dentistry in Ontario for five years prior to going to Calgary in 1904, where he practised since that time.

He was a former president of the Western Canada Dental Association, the Calgary Dental Society and the Alberta Association, as well as a former director of the Dominion Dental Council.

Dr. Doyle was a past member of the Kiwanis Club, a charter member of the Millcent Gun Club and a member of the Ranchmen's Club, the Calgary Golf and Country Club, The Glencoe Club, the Scottish Rite and of Wesley United Church.

He is survived by his wife, Persis; two daughters, Doris and Betty; six grandchildren, and a brother, G. L. Doyle, of Vancouver.

William Fancy Roper—Dr. William Fancy Roper of Toronto, died on September 18, 1958.

He was born in Toronto in 1872 and received his early education at Chattanooga, Tenn., and Atlanta, Georgia. He graduated from the R.C.D.S. in 1912 and practised in Toronto for 45 years. Dr. Roper retired from dentistry in December 1956.

During World War I he served at Exhibition Camp and Niagara Camp as a civilian dentist at the request of the Old Toronto Dental Society. He was a leading member of his church and active in young peoples' work, and was also secretary of the Sunday School for many years.

He is survived by two sisters, Mrs. A. McLean and Mrs. E. G. Hildebrand, and a brother, Frank, of Cleveland, Ohio.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 4th - 7th
1961	Saskatoon, Saskatchewan	June 25th - 28th
1962	Vancouver, British Columbia	June 3rd - 6th

1967	Toronto, Ontario	May
	<i>(Centennial Celebration of Dentistry in Ontario)</i>	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Dec. 8-12, 1958	Greater New York Dental Meeting	Hotel Statler, New York, N.Y.	Mrs. M. Purdy, Exec. Sec.	Room 106A, Hotel Statler, New York 1, N.Y.
Feb. 23-27, 1959	15th Australian Dental Congress	Adelaide, South Australia	The Secretary,	15 Grenfell St., Adelaide, South Australia
Mar. 29-31, 1959	Fifth National Dental Congress and I Congreso Interamericano Dental De Cuba	Havana, Cuba	Dr. Claudio F. Cornell,	Colegio Estomatologico Nacional calle L No. 353, Vedado, Havana, Cuba.
May 10-13, 1959	Ontario Dental Association Convention	Royal York Hotel, Toronto, Ont.	Mrs. A. Durham, Secretary,	234 St. George St., Toronto 5, Ont.
May 28, 29, 30, 1959	British Columbia Dental Association Annual Convention	Hotel Vancouver, Vancouver, B.C.	Dr. W. Ross Upton, Exec. Sec.,	217 Medical Dental Bldg., Vancouver 1, B.C.
May 31-June 3, 1959	Western Canada Dental Society Convention	Banff Springs Hotel, Banff, Alberta	Dr. C. S. Lea, Secretary,	708 Greyhound Bldg. Calgary, Alberta.

ACADEMY OF DENTISTRY TORONTO

Nov. 27, 1958 — Annual Winter Clinic — Royal York Hotel
 Jan. 22, 1959 — First Stated Meeting — Osler Hall
 Jan. 23, 1959 — Special All Day Clinic — Seaway Hotel
 Feb. 12, 1959 — Second Stated Meeting — Osler Hall
 Mar. 6, 1959 — Academy Dinner Dance — Granite Club
 Mar. 26, 1959 — Third Stated Meeting — Osler Hall

For further details write to: Dr. Vernon Herron, Secretary, Academy of Dentistry, 230 St. George St., Toronto 5, Ont.

UNIVERSITY OF TORONTO FACULTY OF DENTISTRY

Postgraduate course in **Orthodontics** (For the General Practitioner) March 9-13, 1959—Enrolment Limit 12—Tuition Fee \$100.00. The course will be under the general direction of Dr. D. G. Woodside, Faculty of Dentistry, 230 College St., Toronto 2B, Ont.

Courses leading to Specialist Certification

Applications will be received up to March 1, 1959 for enrolment for Specialist Certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics and Periodontics. Enrolment in each course is limited, and the courses extend over a period of two academic years (Surgery, three years).

For further information and application forms write to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

UNIVERSITY OF ALABAMA SCHOOL OF DENTISTRY

Refresher Courses: Feb. 14, 15, 1959—"Dental Assisting"

Feb. 21, 22, 23, 1959—"A Practical Approach to the Full Denture Problem"

Feb. 28, Mar. 1, 2, 1959—"Removable Orthodontic Appliance Construction" This course is limited to practicing orthodontists.

For further information please write to: Director, Refresher Course Program, University of Alabama School of Dentistry, 1919 Seventh Ave. South, Birmingham, Alabama.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Étude radiologique de l'évolution des sinus cranio-faciaux chez l'homme, par rapport à l'âge, au sexe et au développement de l'appareil masticateur

par A. S. FAUR, P. Fîru et N. Neagu, Bucarest, Roumanie

(suite et fin)

III. La variabilité des sinus cranio-faciaux par rapport au sexe

Nous n'avons pas trouvé dans la littérature des mentions sur des différences catégoriques existant parmi les sinus cranio-faciaux, par rapport au sexe. On rencontre pourtant parfois l'affirmation que les petits sinus appartiendraient généralement au sexe féminin.

Chez le gorille et chez l'orang-outan, les différences sexuelles sont nettes, pour ce qui est des dimensions des sinus frontaux tout spécialement. Mais, chez ces animaux, les différences sexuelles au niveau de l'appareil masticateur sont bien marquées.

Le gorille et l'orang-outan mâles ont le crâne et les crêtes sagitales bien développés et la force de contraction de la musculature de l'appareil masticateur est de

beaucoup plus puissante chez les mâles que chez les femelles.

Nous avons fait l'examen radiologique de trente-quatre crânes d'enfants de 5 à 18 ans, de sexes différents, et nous n'avons pas remarqué des différences pour ce qui concerne le lieu de l'apparition des sinus cranio-faciaux, leur forme et leurs dimensions.

Nous avons examiné de même vingt-quatre crânes d'adultes entre 25 et 40 ans, parmi lesquels dix appartenaient au sexe féminin et quatorze au sexe masculin.

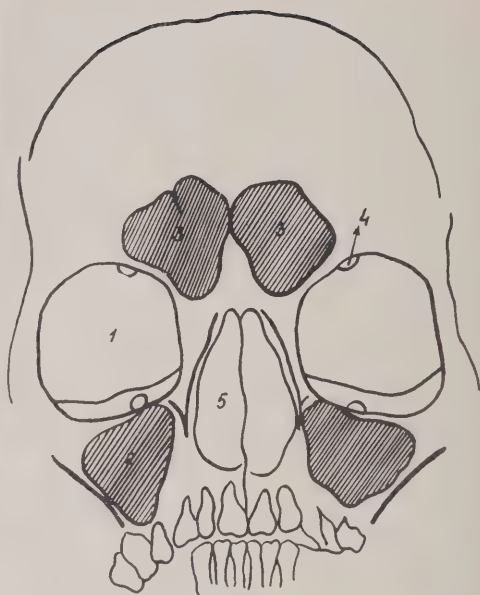
Seuls les sinus frontaux présentent certaines différences sexuelles.

Chez l'homme, ces sinus étaient généralement plus grands transversalement et dépassaient en dehors le trou supra-orbitaire.



Fig. 14. Crâne R.2639, sexe féminin, 37 ans.

Les sinus frontaux sont de dimensions moyennes (les plus fréquents chez la femme). 1) orbite; 2) sinus maxillaire; 3) sinus frontaux; 4) trou supra-orbitaire; 5) fosses nasales.



Chez la femme, les sinus frontaux étaient plus réduits et ne dépassaient pas, en dehors, le trou supra-orbitaire (fig. 14). Ces crânes présentaient aussi des différences dans le développement de leur appareil masticateur.

Dans cette série de vingt-quatre crânes, nous avons rencontré deux crânes de mâle adulte ayant des sinus frontaux réduits (crâne R.143, fig. 15) qui ne dépassaient pas le trou supra-orbitaire, ainsi qu'un crâne féminin (cr. R. 486, fig. 16) dont le sinus frontal dépassait en dehors le trou supra-orbitaire de 6-8 mm.

IV. Variabilité des sinus cranio-faciaux par rapport au développement de l'appareil

A. Nous avons radiographié six crânes du même âge et du même sexe, mais pourvus d'une denture différente et présentant un développement différent des maxillaires et du relief de la face.

Le crâne R. 2106, appartenant à un homme âgé de 33 ans (fig. 8), est pourvu d'une denture complète, présentant une

usure du 1er et du 2ème degré, un massif facial avec un puissant relief, une crête supra-orbitaire bien développée, avec une surface rugueuse bien représentée.

Un tel crâne a sans doute appartenu à un homme pourvu d'un appareil masticateur puissamment développé.

Les piliers de pression du massif facial (naso-frontal et zygomato-alvéolaire) sont épais, puissants.

Les sinus cranio-faciaux apparaissent dans les espaces cintrés par ces piliers.

La dimension moyenne des diamètres des sinus maxillaires est de 2. cm x 2, 5 cm. Les sinus frontaux sont très développés, ayant un diamètre transversal de 3, 8 cm. et un diamètre vertical, devant la glabelle, de 2 cm.

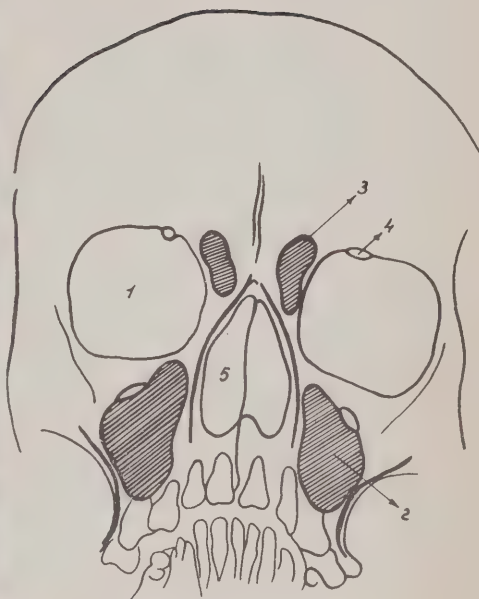
Le contour de ces sinus est polycyclique; ils ont des septums falciformes qui pourraient donner une indication approximative sur le nombre des cellules frontales annexées.

Le sinus sphénoïdal est très grand et occupe tout le corps du sphénoïde (crâne R. 2106 fig. 11). En incidence axiale, le



Fig. 15. Crâne R.143, sexe masculin, 31 ans.

Les sinus frontaux sont petits, les sinus maxillaires hauts. Hyperleptoprosopie dont l'appareil masticateur est faiblement développé. 1) orbite; 2) sinus maxillaire; 3) sinus frontal; 4) trou supra-orbitaire; 5) fosses nasales.



sinus apparaît très développé dans le sens transversal.

Le crâne R.1028 (fig. 17) appartient toujours à un homme de 33 ans, mais affecté d'une édentation totale supérieure; sa dentition inférieure était complète.

La crête alvéolaire supérieure était presque complètement atrophiée, tandis que les dents inférieures présentaient un processus étendu de paradontose.

Ces éléments nous permettent de déduire que ce crâne appartenait à un homme qui exécutait avec beaucoup de difficulté l'acte de la mastication et dont les forces de pression, durant la mastication, étaient tout à fait réduites.

Ce crâne présente des sinus maxillaires beaucoup plus grands que ne présentait le crâne précédent. Ces sinus envoient des prolongements dans l'os malaire et, en bas, ils s'étendent jusqu'à quelques mil-

limètres de la crête alvéolaire résorbée. Leur diamètre vertical atteint ainsi 4 cm et leur diamètre horizontal 2, 5 cm.

Les principaux piliers de pression, zygomato-alvéolaire et naso-frontal, sont minces et interrompus même, par suite, probablement, de la fonction tout à fait réduite de l'acte de la mastication. Les sinus frontaux sont bien délimités et leurs dimensions sont moyennes.

Les sinus sphénoïdaux s'étendent jusqu'à la moitié antérieure de la selle turcique, ainsi qu'on le constate sur la majorité des crânes humains.

Dans ces cas, les forces de la mastication étant réduites par suite de la perte prématurée de toutes les dents supérieures, les piliers de pression s'amincissent, les parois des maxillaires se résorbent et augmentent ainsi la capacité des sinus maxillaires. La muqueuse sinusale s'est hyperplasiée secondairement, pour couvrir entièrement la surface sinusale agrandie.

Les sinus frontaux, les sinus sphénoïdaux et les cellules ethmoïdales paraissent être moins influencés chez l'adulte qui a perdu précocement sa denture, principal élément de l'appareil masticateur.

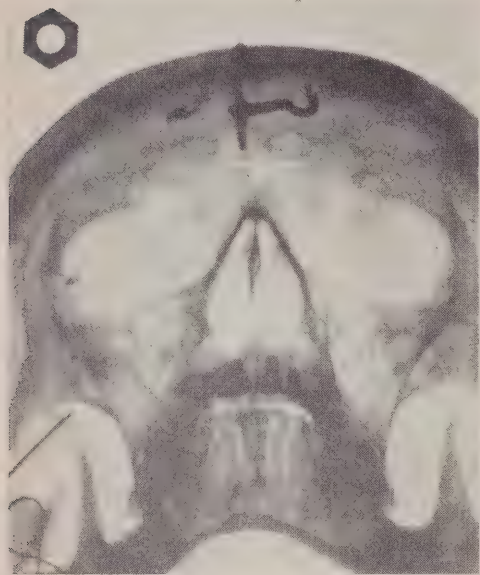


Fig. 16. Crâne R.846, sexe féminin, 26 ans.

Sinus frontaux de grandes dimensions (plutôt rares chez la femme). 1) orbite; 2) sinus maxillaire; 3) sinus frontaux; 4) trou supra-orbitaire; 5) fosses nasales.



une crête frontale et des sinus frontaux bien développés.

De l'étude radiologique de ces crânes d'adultes, ayant un état fonctionnel différent de l'appareil masticateur, nous croyons pouvoir déduire ce qui suit:

1) Un appareil masticateur puissant, pourvu d'une denture complète, mène à la formation de piliers de pression puissants; les sinus cranio-faciaux apparaissent dans les espaces cintrés par ces piliers. Les sinus frontaux semblent avoir pris un important développement transversal, tandis que les autres sinus gardent des limites moyennes.

La corrélation existant entre le torus frontal, la crête frontale et les sinus frontaux de grandes dimensions, rappelée par plusieurs auteurs, pourrait avoir une explication fonctionnelle par le mode de dispersion des forces de pression durant l'acte de la mastication. Un sujet pourvu d'un puissant appareil masticateur présente

tout particulier des sinus frontaux chez ces individus par la seule action de pneumatisation de la muqueuse nasale. Selon nous, l'hyperplasie de la muqueuse nasale est secondaire, car si la muqueuse nasale pouvait à elle seule produire la pneumatisation des os du crâne, on doit se demander pourquoi ne voit-on pas augmenter en volume les sinus malades dans les sinusites polypeuses, là où la muqueuse sinusale subit un processus d'hyperplasie parfois très important et pourquoi, dans ces cas, les limites des sinus affectés par ce processus, ne dépassent pas, en dehors, les piliers de pression cranio-faciaux.

2) Quand la fonction de la mastication est réduite, par suite de la perte prématurée de toutes les dents, ou du moins des dents d'une seule arcade, les piliers cranio-faciaux s'amincissent, s'interrompent, les parois des sinus maxillaires, tout particulièrement, se résorbent, augmentant ainsi la capacité des cavités pneumatiques. Dans ces cas, les sinus maxillaires dépassent les limites de pression, en les résorbant et en les interrompant et envoient même des prolongements dans les os voisins, l'os zygomatique, par exemple.

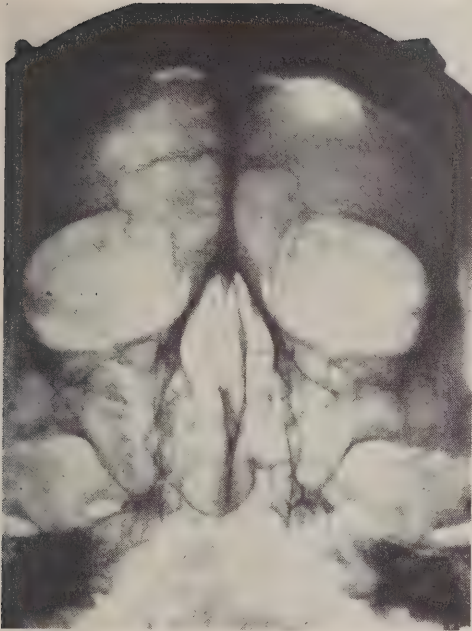


Fig. 17. Crâne A 1028, sexe féminin, 33 ans.

Le contour des sinus maxillaires est effacé; les piliers de pression sont résorbés; ces piliers manquent de continuité sur une importante partie de leur trajet. Noter l'absence totale des dents de l'arcade supérieure. 1) orbite; 2) sinus maxillaire; 3) sinus frontal; 4) trou supra-orbitaire; 5) fosses nasales.



La muqueuse nasale s'hyperplasia secondairement, pour couvrir toute la surface sinusale, ainsi augmentée. Des conditions différentes, donc, déterminées par des pressions de mastication différentes, peuvent avoir conséquence soit l'augmentation des sinus maxillaires, soit l'augmentation des sinus frontaux.

3) Quant aux sinus cranio-faciaux, une fois leur développement achevé, leur forme et leur capacité volumétrique n'est pas immuable, mais, bien au contraire, celle-ci se modifie suivant l'état fonctionnel de l'appareil masticateur tout spécialement.

Il est bien entendu que d'autres facteurs aussi, tels les facteurs neuro-endocrins, sont capables de modifier la forme et les dimensions des sinus cranio-faciaux et à

ce propos nous rappelons les modifications déterminées par l'acromégalie.

B. Nous avons radiographié six crânes de vieillards âgés de quatre-vingts à quatre-vingt-dix ans, de sexe différent et dont l'état de la denture était différent.

Le crâne R. 26 (fig. 18) de 80 ans, appartenant à une femme qui avait une denture presque complète, présente des sinus cranio-faciaux bien développés, d'une capacité moyenne.

Les piliers de pression de ce crâne sont bien représentés et bien contournés et sont plus évidents par suite de la décalcification des zones qui séparent ces piliers, cette décalcification étant en relation avec l'âge avancé du sujet.

Les mailles de la spongieuse de la base du crâne, au niveau de l'apophyse basilaire sont petites comme chez l'adulte. Mais l'aspect des mailles de grandes dimensions de la spongieuse de l'os frontal trahit l'âge avancé du sujet. Les sinus cranio-faciaux ont un contour nettement délimité non interrompu. L'opacité du crâne aux

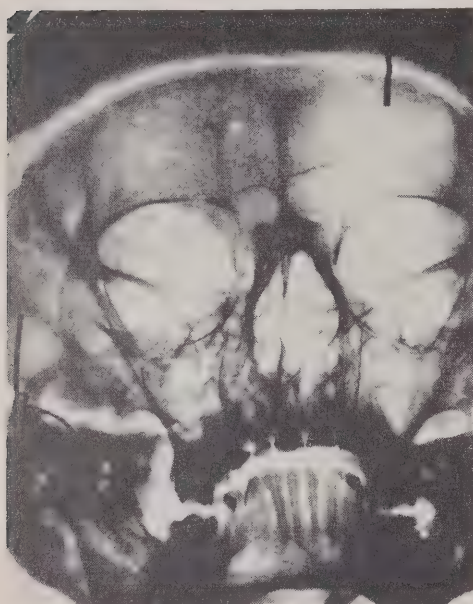
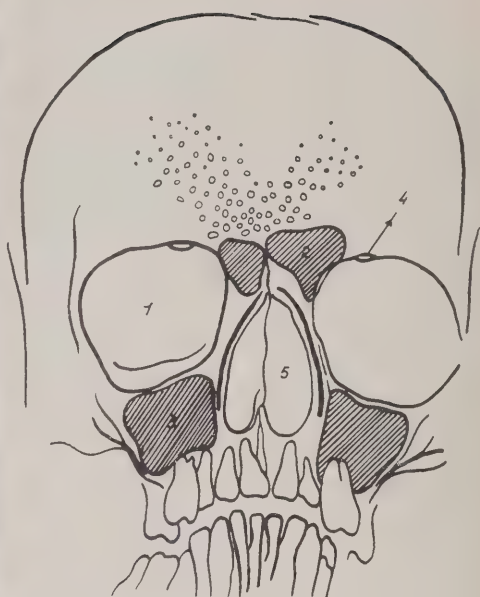


Fig. 18. Crâne R.26, féminin, 80 ans.

Les sinus cranio-faciaux gardent leurs contours chez les sujets âgés, si l'état de leur denture, au point de vue fonctionnel, est resté bon. 1) orbite; 2) sinus frontal; 3) sinus maxillaire; 4) trou supra-orbitaire; 5) fosses nasales.



rayons-X est assez grande et son poids atteint 500 grammes.

Le crâne R.859 (fig. 19) appartient à un sujet âgé de quatre-vingts ans, toujours du sexe féminin, mais totalement édenté; il présente des sinus maxillaires plus volumineux, transversalement et verticalement, qui dépassent les piliers de pression zygomato-alvéolaires et arrivent, par l'extension des cavités pneumatiques, à quelques millimètres de la crête alvéolaire très résorbée.

Les contours des sinus fronto-sphénoïdaux et des cellules ethmoïdales ne sont plus aussi bien délimités et leur forme est plus irrégulière.

L'opacité du crâne aux rayons-X est réduite et son poids atteint à peine 400 grammes; c'est dire qu'il pèse 100 grammes de moins que l'autre crâne du même

sexe et du même âge, mais pourvu d'une denture presque complète.

Les piliers de pression naso-frontaux et zygomato-alvéolaires sont plus minces, estompés, interrompus même.

La spongieuse de la base du crâne, au niveau de l'apophyse basilaire, est formée de mailles plus grandes, ce qui indique, à ce niveau, l'existence d'un processus de résorption avancé.

Nous avons rencontré des images semblables au niveau des autres crânes de vieillards examinés par nous.

L'étude de ces crânes de vieillards, chez lesquels on rencontre un processus général de décalcification, lié à l'âge, nous a permis de constater ce qui suit:

1) Là où la fonction de la mastication a été maintenue au moins par un de ses éléments principaux, les dents, le contour du massif facial se maintient, les piliers de pression cranio-faciaux sont bien représentés, le processus de décalcification intéressant seulement les portions du squelette facial situées entre les piliers, ou en dehors de ceux-ci, qui ne sont pas trop

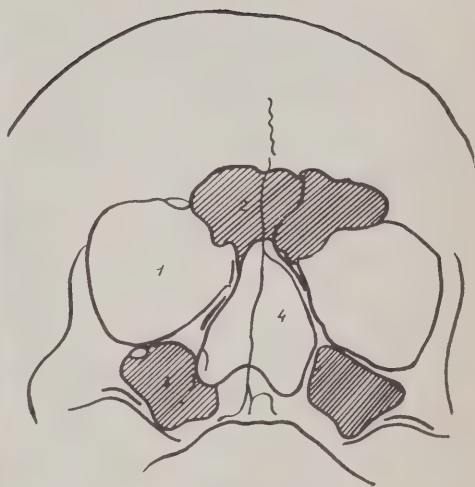
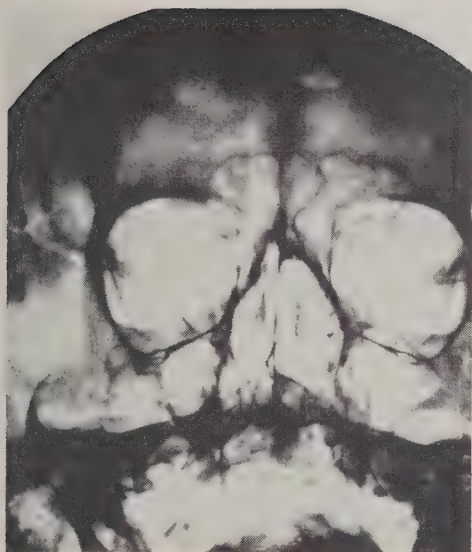


Fig. 19. Crâne R.859, sexe féminin, 80 ans.

Edentation totale bilatérale. Les sinus maxillaires ne sont pas bien délimités. Les piliers naso-frontaux et zygomatiques sont effacés. 1) orbite; 2) sinus frontal; 3) sinus maxillaire; 4) fosses nasales.

sollicitées au cours de l'acte de la mastication.

2) Là où la fonction de la mastication est très réduite, par suite de la perte de toutes les dents, les contours de la face ne sont pas aussi bien conservés, les parois des maxillaires surtout souffrent un processus intense de décalcification, qui ne respecte ni même les anciens piliers de pression. Les sinus maxillaires augmentent de volume et dépassent les limites des piliers de pression, décalcifiés.

Les contours des sinus et des piliers de pression apparaissent irréguliers, interrompus, estompés.

3) La fonction de la mastication joue un rôle important dans le maintien de la forme du crâne viscéral, ou du moins dans le maintien relatif du contour, de la forme et des dimensions des sinus cranio-faciaux.

Le processus général de décalcification, lié à l'âge, respecte les zones soumises aux sollicitations fonctionnelles, pendant une longue période de temps.

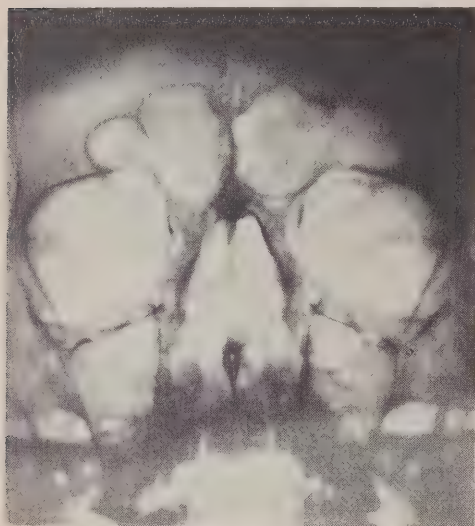
Dans les cas pathologiques de décalcification générale, ces zones fonctionnelles se décalcifient les dernières.

Nous avons radiographié, pour comparaison, une série de crânes d'adultes pourvus

d'une denture complète, mais dont la forme de la face, du nez, des orbites était variable dans le but de vérifier si leurs forme et dimensions sont liées aux processus particuliers de croissance du crâne.

Nous avons radiographié par exemple deux crânes appartenant à des adultes, à suture métopique; un de ces deux crânes présentait des reliefs musculaires puissants (crâne R 1030,827 fig. 20), tandis que l'autre, à juger d'après les reliefs musculaires, avait appartenu à un sujet pourvu d'un appareil masticateur plutôt réduit (crâne Cr. 180 R.29 fig. 21). Le premier de ces deux crânes présentait des sinus frontaux très développés transversalement et qui dépassaient, à gauche, le trou supra-orbitaire d'un centimètre.

Les dimensions de ces sinus frontaux n'atteignaient pas celles du crâne 2106 (fig. 8) qui possédait un appareil masticateur puissamment développé, mais dépassaient les dimensions des sinus du crâne pourvu d'un appareil masticateur faible, dont les sinus frontaux étaient moins bien



développés transversalement et ne dépassaient pas, en dehors, le trou supraorbitaire (*fig. 21*).

Nous n'avons pas constaté des différences importantes, pour ce qui est de la forme et des dimensions cranio-faciales, aux crânes dont l'*apertura nasalis* était très haute ou très basse ou dont les orbites étaient très hautes ou très basses.

Chez les hyperleptoprosopes, les sinus maxillaires sont plus hauts que larges.

On peut dire la même chose des hyperuriprosopes, dont les sinus maxillaires sont également plus développés en hauteur qu'en largeur.

Nous avons radiographié deux crânes d'hyperleptoprosopes qui avaient appartenu à des individus mâles d'âge presque égal, mais dont l'appareil masticateur était différemment développé.

L'hyperleptoprosope pourvu d'un appareil masticateur puissant avait des sinus frontaux plus développés transversalement, des sinus maxillaires hauts (crâne R.2 *fig. 22*) et de grands sinus sphénoïdaux qui dépassaient, en arrière, la moitié antérieure de la selle turcique (*fig. 23*). L'hyperleptoprosope, dont l'appareil masticateur était moins bien développé et dont le massif facial était plutôt gracile, pré-

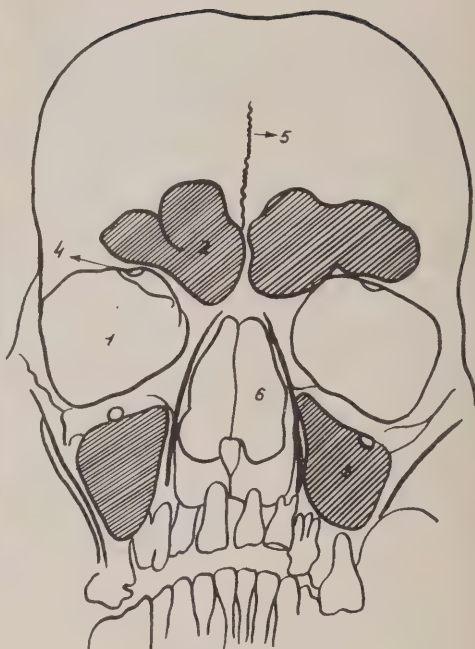


Fig. 20. Crâne R1030, sexe masculin, 24 ans.

L'appareil masticateur est puissamment développé; persistance de la suture métopique. 1) orbite; 2) frontal; 3) sinus maxillaire; 4) trou supra-orbitaire; 5) suture métopique; 6) fosses nasales.

sentait de très petits sinus frontaux et des sinus maxillaires développés en hauteur (*fig. 15*). Les dimensions absolues des sinus maxillaires de ce dernier crâne étaient plus petites que celles des sinus maxillaires du premier crâne.

On peut donc déduire que la forme des sinus maxillaires est étroitement liée aux dimensions du massif facial.

L'examen radiographique d'un crâne qui avait appartenu à un sujet mâle, âgé de 25 ans (crâne R. 1012 *fig. 24* et *fig. 25*), pourvu d'un appareil masticateur bien développé, et qui avait perdu, à l'âge de 4 ans, son oeil droit, par suite de la variole, avant donc l'époque de l'apparition des sinus frontaux et des sinus sphénoïdaux, durant la période de développement de la seconde cellule (sous-orbitaire) du sinus

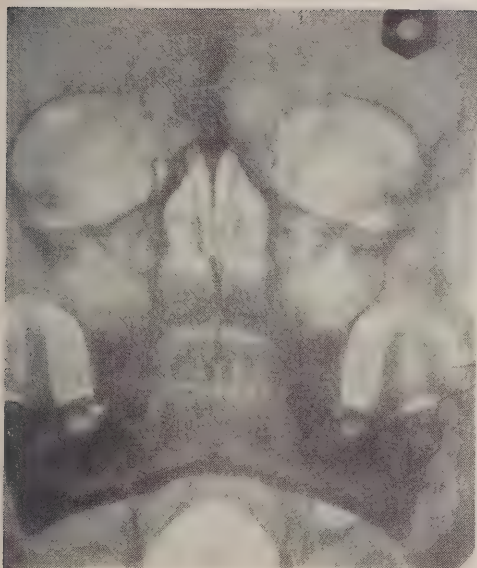
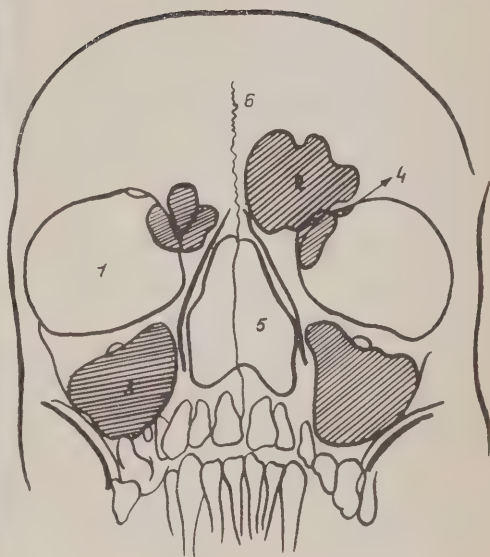


Fig. 21. Crâne 180 R.29, sexe masculin.

Sinus frontaux de petites dimensions et persistance de la suture métopique; appareil masticateur peu développé. 1) orbite; 2) sinus frontal; 3) sinus maxillaire; 4) trou supra-orbitaire; 5) fosses nasales; 6) suture métopique.



masticateur et l'état de l'oblitération des sutures crâniennes.

1) L'apparition et le développement des sinus cranio-faciaux au cours de la phylogénèse et de l'ontogénèse humaines sont liés à toute une série d'importantes transformations durant le développement de l'organisme en général et du crâne en particulier.

Les changements de la courbe de croissance de la musculature des gonades, des glandes surrénales, du cerveau, des différentes parties du crâne, l'éruption dentaire, coïncident avec certains moments du développement des sinus cranio-faciaux.

Les troubles de la croissance, les troubles neuro-endocriniens déterminent des modifications des dimensions et de la forme de ces cavités pneumatiques, comme, par exemple, dans l'acromégalie.

Certains auteurs n'ont accordé de valeur qu'aux facteurs généraux de croissance, qui se transmettraient par voie d'hérédité, indifféremment des conditions du milieu ambiant. Pour Weinerth, par exemple, les sinus frontaux ont une valeur purement phylogénétique; les animaux dépourvus de sinus frontaux et apparte-

maxillaire, nous a permis de supposer qu'après l'âge de 4 ans la présence du globe oculaire ne joue plus un rôle trop important dans la formation des sinus cranio-faciaux.

En effet, les sinus frontaux étaient, dans ce cas, symétriques et bien développés; de même, les sinus maxillaires, les sinus sphénoïdaux et les cellules éthmoïdales avaient un aspect et des dimensions normales.

V. Discussion du matériel étudié

Les sinus cranio-faciaux constituent une conquête tardive dans la série animale. Leur apparition et leur développement nécessitent la participation d'un facteur général de croissance (neuro-endocrin) et de deux facteurs locaux: l'état de développement et de fonctionnement de l'appareil

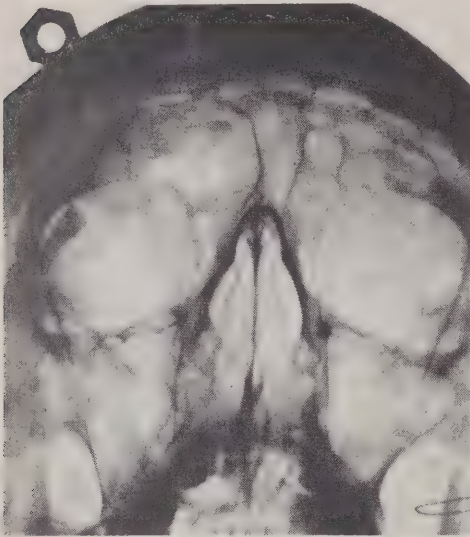
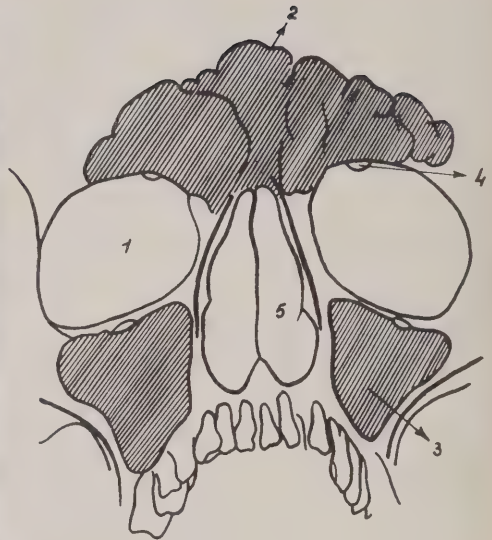


Fig. 22. Crâne R2, sexe masculin 24 ans.

Les sinus frontaux sont agrandis transversalement, les sinus maxillaires sont hauts, Hyperleptoprosopie pourvu d'un appareil masticateur puissamment développé. 1) orbite; 2) sinus frontaux; 3) sinus maxillaire; 4) trou supra-orbitaire; 5) fosses nasales.



nant au même genre devraient, d'après lui, être classés dans un autre genre (le bouledogue, du genre des canidés et Varecia et Catus des lémuriens).

Nous pensons que ces facteurs généraux ont sans doute une valeur toute particulière, mais ils sont susceptibles d'être modifiés par le milieu ambiant.

Des modifications survenues dans le genre d'alimentation, chez les animaux ou chez l'homme, peuvent avoir pour conséquence, à la longue, la modification de l'état fonctionnel de l'appareil masticateur et la modification de la structure fonctionnelle du crâne et donc des sinus.

Seul le plan général d'organisation se transmet par voie d'hérédité et a une valeur phylogénétique.

Les sinus cranio-faciaux ont une valeur incontestable pour ce qui est du développement ontogénétique; leur forme et leur volume sont tout particulièrement varia-

bles par rapport aux facteurs du milieu ambiant.

Dans l'apparition et le développement des sinus cranio-faciaux, deux facteurs, ignorés jusqu'à présent, jouent un rôle des plus importants.

Let but de ce travail a été justement celui d'attirer l'attention des spécialistes sur ces deux facteurs, à savoir:

- a) l'état fonctionnel de l'appareil masticateur
- b) l'état d'oblitération des sutures crâniennes.

a) L'état fonctionnel de l'appareil masticateur est le facteur le plus malléable vis-à-vis des conditions du milieu extérieur, puisque lié à un élément vital pour l'organisme: la nourriture, qu'il trouve et qu'il prépare dans les milieux les plus divers.

Le développement de l'appareil masticateur a lieu sous l'influence d'un facteur général de croissance, expression de l'expérience accumulée par nos ancêtres par voie phylogénétique; si le genre d'alimentation se modifie, par suite du changement d'habitat ou du mode de préparation des aliments, conséquences de la

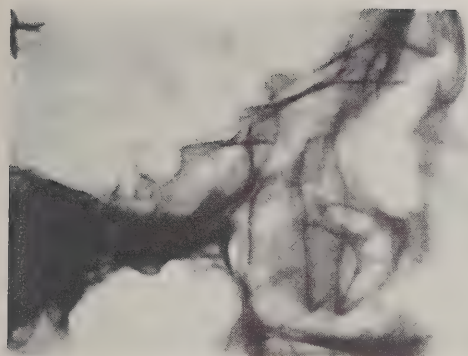
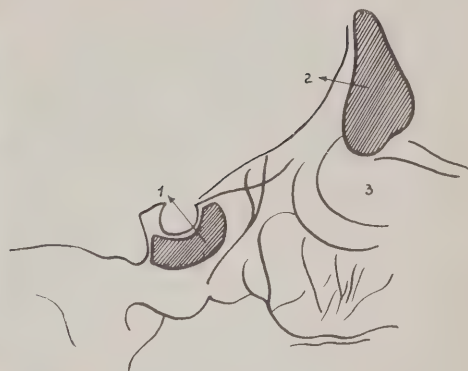


Fig. 23. Crâne R2, sexe masculin, 24 ans.

Sinus frontaux et sinus sphénoïdaux de très grandes dimensions; hyperleptoprosopie pourvu d'un appareil masticateur fortement développé. 1) sinus sphénoïdal; 2) sinus frontal; 3) orbite.



civilisation, l'état fonctionnel de l'appareil masticateur se modifie à son tour et avec lui la structure fonctionnelle du crâne viscéral, la forme du crâne et le développement des sinus. Ces modifications se transmettent ensuite par voie d'hérédité et par l'intermédiaire du facteur général de croissance.

Le développement exagéré des incisives supérieures chez les proboscidiens, qui les utilisent comme défenses, a eu pour conséquence des modifications dans la structure fonctionnelle du crâne de ces animaux et au développement extraordinaire des sinus frontaux. Des changements semblables se sont produits chez les rongeurs, chez lesquels les incisives poussent continuellement et fonctionnent en permanence.

Le développement différent des crânes et de la musculature de l'appareil masticateur chez le gorille et chez l'orang-outan mâle a été suivi d'une différenciation sexuelle de l'état fonctionnel de l'appareil masticateur et de la forme et des dimensions des sinus cranio-faciaux. L'existence d'un puissant appareil masticateur chez l'homme fossile, surtout le *Pithecanthropus* et l'*Homo primigenius*, liée à une

alimentation primitive a eu conséquence le développement de puissants piliers de pression zygomato-alvéolaires, tout spécialement, ainsi que le développement d'un véritable torus supra-orbitaire, à sinus frontaux de très grandes dimensions.

Les modifications de l'occlusion chez le bouledogue, liées probablement à d'autres facteurs que ceux du milieu ambiant, ont été suivies par la réduction des piliers de pression naso-frontaux et par la disparition des sinus frontaux; il est probable que les ancêtres du bouledogue étaient pourvus de sinus frontaux, comme toutes les espèces du genre des canidés.

La baleine, chez laquelle les dents ont été remplacées par des fanons, organes qui n'ont aucun rôle pour la mastication —cet animal se nourrissant du plancton— n'a pas de sinus frontaux.

Les pinnipèdes (le phoque, le morse) n'utilisent pas leurs incisives centrales pour la mastication et ont, par suite, perdu leurs sinus frontaux.

Les modifications de l'état fonctionnel de l'appareil masticateur, par suite de la perte prématurée des dents, chez l'homme adulte, mènent à d'importantes modifications de la forme et de la structure du crâne viscéral et à des modifications de volume des sinus maxillaires tout spécialement, modifications qu'on n'observe pas après l'âge de quatre-vingts ans si la denture s'est maintenue en bon état et si

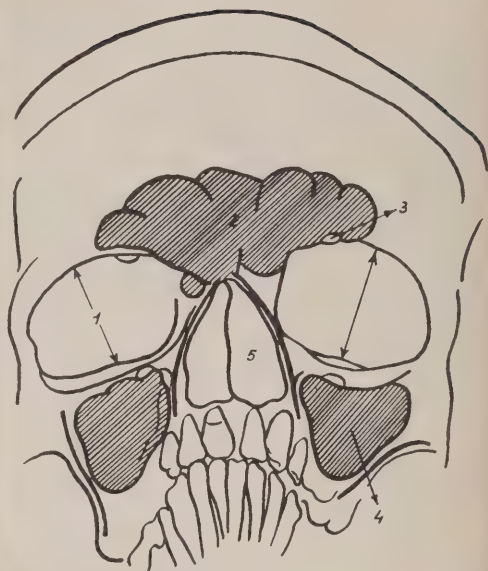
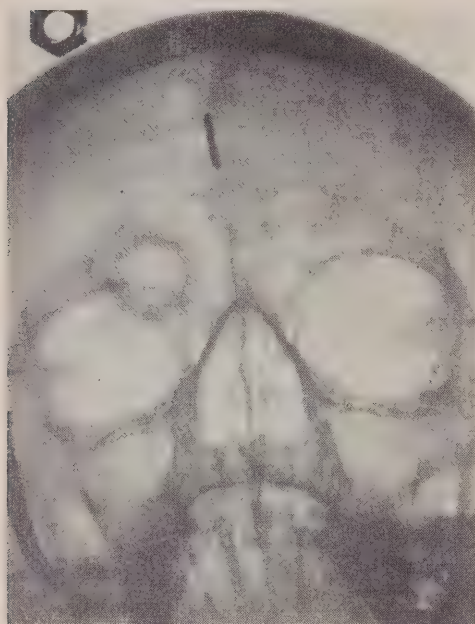


Fig. 24. Crâne R1012, sexe masculin, 25 ans.

Perte du globe oculaire droit, à l'âge de quatre ans. Les sinus frontaux et maxillaires sont normalement développés. 1) orbite droite, moins développée; 2) sinus frontaux; 3) trou supra-orbitaire; 4) sinus maxillaire; 5) fosses nasales.

l'état fonctionnel de l'appareil masticateur est resté satisfaisant.

La fonction de la mastication joue un rôle important non seulement dans le modelage du crâne et des cavités sinuses mais aussi, dans une certaine mesure, dans la conservation de ces formes.

Nous considérons que la grande variabilité des sinus cranio-faciaux chez une même population ou chez une même race ne peut être expliquée que par la variété de l'état de fonctionnement de l'appareil masticateur, liée elle-même à la diversité des modes d'alimentation.

L'appareil masticateur se développe dans une grande mesure au cours de la phylogénèse et de l'ontogénèse, quand le nombre des os du crâne se réduit par l'oblitération de certaines sutures, quand les insertions d'origine et les insertions terminales des muscles masticateurs s'éloignent les uns des autres par suite de l'accroissement du crâne, quand apparaissent et se développent les alvéoles et leur appareil ligamentaire, se différencient les dents ou apparaissent les dents

permanentes et s'intensifie la fonction de la mastication.

Parallèlement avec ces transformations, qui ont lieu pendant le développement de l'appareil masticateur, au cours de la phylogénèse et de l'ontogénèse, on observe l'apparition et le développement des sinus cranio-faciaux.

Toutes ces observations démontrent l'importance des fonctions de l'appareil masticateur dans l'apparition et le développement des sinus cranio-faciaux.

b) *L'état d'oblitération des sutures crâniennes* représente le second facteur important de l'apparition et du développement des sinus cranio-faciaux.

Au cours du développement phylogénétique, les sinus cranio-faciaux se généralisent chez les mammifères où le nombre des os du crâne est réduit par l'oblitération de certaines sutures crâniennes, obli-

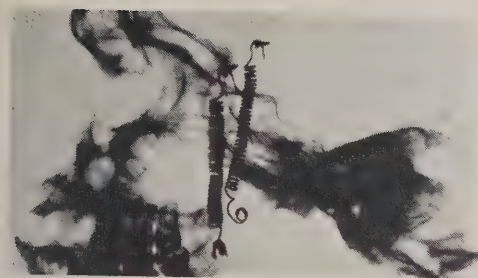
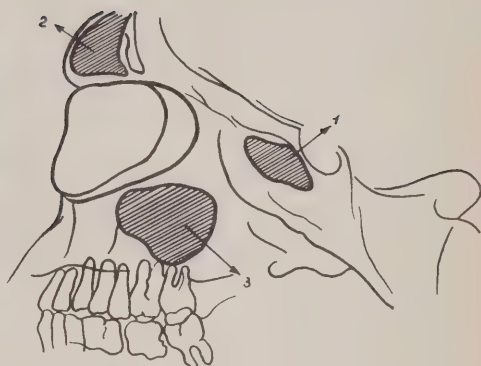


Fig. 25. Crâne R1012, sexe masculin, 25 ans (profil). Perte du globe oculaire droit à l'âge de quatre ans. 1) sinus sphénoïdal; 2) sinus frontal; 3) sinus maxillaire.



tération qui a lieu de bonne heure et chez lesquels la fonction de la mastication fait son apparition, par suite de la différenciation de la dentition.

Chez l'homme, on observe de même, au cours du développement ontogénétique, l'apparition des sinus cranio-faciaux qui se produit en même temps que l'oblitération des sutures craniennes (la suture métopique, la suture qui siège entre les cornes de Bertin et le présphénoïde, etc.)

On a observé que les sinus maxillaire et sphénoïdal n'envoient leurs prolongements dans l'os malaire ou dans la lame basilaire que chez l'adulte, après l'oblitération des sutures maxillo-malaire ou sphéno-occipitale) dans la zone d'expansion des sinus.

Nos observations nous permettent de penser que le rôle amortisseur du tissu

conjonctif des sutures explique ces modifications au cours de l'apparition et de l'établissement de la forme et des dimensions des sinus cranio-faciaux.

Pourtant, suivant nos recherches, le rôle joué par l'appareil masticateur serait plus important que celui de l'état d'oblitération des sutures; des crânes appartenant au même sexe et du même âge, présentant tous la persistance de la suture métopique, mais dont l'appareil masticateur était dans un état différent au point de vue fonctionnel, présentaient des sinus frontaux de dimensions différentes (fig. 19 et 20).

L'étude de l'action des facteurs généraux et locaux, des facteurs héréditaires et des facteurs du milieu ambiant nous permettra, sans doute, d'expliquer, d'une manière plus complète, les causes qui président à la formation des sinus cranio-faciaux.

Nouvelles de l'Association

Red Deer, en Alberta, fluorure son eau

Apparemment, la première ville d'Alberta à approuver par plébiscite la fluoruration et à la mettre en oeuvre est la ville de Red Deer, qui compte 12,000 habitants. La fluoruration de l'eau de consommation de la ville a commencé en juin dernier, sans annonce officielle. Le service d'aqueduc n'a pas reçu de plaintes et on a fait part au public de cette nouvelle mesure que six semaines après. L'appareil qui ajoute du fluor à l'eau coûte environ \$4,500. Le fluor lui-même coûte environ \$20.00, par mois. On analyse l'eau régulièrement pour s'assurer de sa teneur en fluor. La ville de Fairview, en Alberta, a aussi commencé à fluorurer l'eau de son aqueduc au bénéfice de ses 1,000 habitants.

Bienvenue au Bulletin de Nouvelles de l'Association dentaire de Colombie britannique

L'Association dentaire de Colombie britannique vient de réaliser un nouveau progrès en publiant son bulletin sous forme d'imprimé. Jusqu'ici, ce bulletin était miméographié. Le nouveau format a une apparence distinguée et professionnelle. Félicitations à l'Association et au rédacteur du bulletin, le Dr Munro.

Le premier numéro du bulletin rapportait que le Congrès de l'A.D.C.B. avait attiré, cette année, le plus grand nombre de dentistes jamais vu, soit 390.

Les annonces des "hommes en blanc" bannies à la télévision des Etats-Unis

L'Association nationale des Emissions radiophoniques des Etats-Unis a amendé son code de télévision de façon à défendre les annonces qu'on connaît sous le nom "d'hommes en blanc". A ce sujet, le Dr Hillenbrand, secrétaire de l'Association dentaire américaine, écrit: "Depuis plusieurs années, la profession dentaire s'inquiétait des déclarations fautives et trompeuses qui étaient faites à la télévision par de supposés dentistes. L'Association dentaire américaine croit que ce nouvel amendement . . . qui empêche les acteurs de prétendre qu'ils sont des dentistes pour faire des annonces commerciales, favorise l'intérêt du public."

A partir du 1er janvier, les annonces actées qui contiennent des déclarations supposées faites par des médecins, des dentistes ou des garde-malades doivent être faites par des membres en règle de ces professions. Jusqu'à maintenant, la loi permettait à des acteurs

de jouer le rôle de membres de ces professions, à condition que le mot "dramatisation" apparaisse au moins dix secondes sur l'écran.

Pas assez sucré?

L'industrie du sucre au Canada croit apparemment que la dent sucrée du pays ne l'est pas assez. On apprend que cette industrie se propose un vaste programme d'annonce pour rendre le Canadien plus friand de sucre.

La consommation annuelle de sucre se chiffre à 13.6 livres, par tête. Aux Etats-Unis et au Royaume-Uni, la consommation est respectivement de 17.4 et de 28 livres.

Les dentistes sont invités à renouveler leurs efforts pour rendre les Canadiens plus conscients de l'effet du sucre sur les dents.

Nomination de l'officier dentaire de l'Organisation mondiale de la Santé

Le docteur Bruce Rice, qui était assistant-directeur de la Section d'Hygiène dentaire du Ministère de la Santé de la Nouvelle-Zélande, vient d'être nommé officier dentaire en chef de l'Organisation mondiale de la Santé. Il succède au docteur Carl L. Sibelius de Nashville, Tenn., qui occupait cette fonction à Genève, depuis deux ans.

Bottin de 1958

La dernière livraison contient la liste complète et révisée de tous les dentistes qui sont membres de l'Association dentaire canadienne. Ce bottin était jusqu'ici publié tous les deux ans, mais, à partir de cette année, il le sera tous les ans. On peut s'en procurer une copie, en écrivant au secrétariat. Le prix est d'un dollar.

Réclame douteuse des dentifrices

L'Association dentaire américaine a demandé au Congrès de Washington de passer une loi pour contrôler la réclame douteuse qui est actuellement faite pour les dentifrices. Contrairement à ce que croient généralement plusieurs dentistes canadiens, la U.S. Federal Trade Commission avoue n'avoir pas les pouvoirs nécessaires pour faire cesser les annonces pour les dentifrices, dont les allégués ne sont pas prouvés par les faits. L'Association dentaire américaine demande d'élargir les lois pour rendre plus facile et plus rigoureux le contrôle des prétentions thérapeutiques.

Aux séances du Congrès, à Washington,

le docteur Harry Lyons, président-sortant-de-charge de l'A.D.A., a fait la déclaration suivante:

"Depuis quelques années, nous avons été témoins de la mise sur le marché, avec fanfare, de dentifrices soi-disants "thérapeutiques" ayant le grand mérite d'être des digestifs à base de pepsine, des antiseptiques, des détergents sulfatés, des agents dissolvants, de l'urée, des composés ammoniacaux, de la chlorophyle, des antienzymes et des composés de fluor. L'un après l'autre, ces dentifrices ont été portés aux nues à force de réclame que ne substantiait aucune recherche sérieuse. Aucun de ces dentifrices a survécu au temps et à l'usage . . ."

Il est vrai que le public a dépensé des millions de dollars pour l'achat de ces produits, mais là n'est pas le point le plus important dans cette question de réclame à outrance, basée sur des futilités pseudo-scientifiques. Les conséquences les plus graves de ces annonces sont d'ordre sanitaire, comme celle de fournir à la population une fausse sécurité pour la carie dentaire, pour les maladies périodentaires, pour la mauvaise haleine due aux désordres de la cavité nasale, des sinus, des poumons et du tube digestif et pour les maladies constitutionnelles, qui ont des manifestations dans la muqueuse buccale.

Quelques-unes de ces annonces vont même jusqu'à prétendre qu'on peut manger impunément du sucre toute la journée, à condition qu'on ait utilisé une fois, le matin, telle pâte à dents, avant le déjeuner. Cette suggestion épouvantable annule tout le travail accompli par les professions sanitaires pour éduquer le public sur les mesures hygiéniques et alimentaires à prendre pour protéger ses dents contre les ravages de la carie. Il n'y a pas de raccourci en hygiène dentaire et le fait de tromper le public dans ce domaine constitue une violation délibérée de son bien-être sanitaire.

Le docteur Sholow Pearlman de l'A.D.A. Council on Therapeutics, dans un mémoire écrit, d'éclaire que la plupart des réclames faites aux soi-disants dentifrices "thérapeutiques", exagèrent, grossissent et dénaturent des résultats quelconques obtenus au cours de prétendues recherches, en trompant grossièrement et en décevant gravement le consommateur. Il dit plus loin "qu'on ne peut prouver qu'aucun dentifrice actuellement sur le marché joue un rôle un tant soit peu important dans la prévention des maladies buccales". "Ce qui compte," déclare le docteur Pearlman, "c'est le brossage des dents; les dentifrices ne font qu'aider la brosse à dents." Pour demander l'intervention du gouvernement, l'A.D.A. invoque l'argument suivant: quand il y va de la santé du pu-

blic, le gouvernement est justifié d'imposer à l'industrie des normes rigides de responsabilité.

Centenaire de l'A.D.A.

L'Association dentaire américaine, pour la célébration de son centenaire d'existence, qui aura lieu à New York du 14 au 18 septembre 1959, désire s'assurer de films et d'étalages scientifiques de dentistes de toutes les parties du monde.

Les dentistes intéressés à présenter un film ou un étalage scientifique peuvent obtenir des formules à cet effet en écrivant au Council on Scientific Sessions, Association dentaire américaine, 222 East Superior Street, Chicago 11, Illinois, Etats-Unis. On acceptera des films et des étalages de la part d'institutions, d'agences ou de maisons commerciales à condition qu'ils soient de nature purement scientifique. On refusera tout étalage et tout film qui renfermera des annonces et tout matériel qui semble poursuivre un but commercial. Les personnes, qui désireront soumettre un film qui n'est pas rédigé anglais, devront fournir un résumé du texte en langue anglaise ou déléguer quelqu'un qui pourra expliquer le film en anglais.

Réunion annuelle de la Fédération dentaire internationale, à Bruxelles

Le docteur Thure Brandrup-Wognsen, de Stockholm, a été réélu président de la Fédération dentaire internationale à la 46e réunion annuelle de cet organisme qui a eu lieu à Bruxelles, du 27 août au 3 septembre. La prochaine réunion annuelle de la F.D.I. se tiendra à New York, en septembre 1959.

Il y a deux ans, on avait nommé un Comité spécial de Revision, composé des docteurs Harold Hillenbrand, de Chicago, agissant comme président, Hans Friekofec, de Zurich et Knut Gard, d'Oslo. Ce comité a soumis une revision complète de la Constitution et des règlements de F.D.I. La Fédération a accepté ce rapport qui avait pour but de rendre l'administration plus souple et plus économique.

Le docteur Don W. Gullet, de Toronto, a été nommé membre du Conseil de la Fédération.

On s'est rendu compte au cours de la réunion de l'importance toujours croissante d'une organisation solide pour la dentisterie, au niveau international. Comme c'est le cas pour toute organisation, l'augmentation du coût de la vie et l'accroissement de ses activités amènent nécessairement des problèmes pécuniaires. La cotisation annuelle des associations nationales sert à défrayer les frais d'administration, mais la F.D.I. ne peut réaliser des progrès que grâce aux cotisations personnelles des membres adhérents. En plus du travail nécessaire qu'elles accom-

plissent dans leur domaine respectif, les professions, grâce à leurs organismes internationaux, peuvent contribuer énormément au bien-être commun.

Le conseil de ville de Charlottetown adopte la fluoruration

Le Conseil de ville de Charlottetown, Ile-du-Prince-Edouard, a approuvé unanimement le principe de la fluoruration pour son aqueduc municipal. Cette décision comble d'espoir tous les partisans de cette mesure dans les Maritimes. Dans le passé, ce Conseil de ville avait été témoin de discussions orageuses sur cette question, mais en septembre dernier, une résolution en faveur de la fluoruration a reçu l'appui de tous les conseillers. La résolution se lit en partie comme suit:

"... le Conseil de ville recommande donc à la Commission des Egouts et de l'Aqueduc de mettre en force cette recommandation aussitôt que possible. Et que si on trouve que la ville n'a pas les pouvoirs législatifs pour ce faire, on prie le gouvernement provincial de voter les lois nécessaires."

Projet d'un Centre de la Pharmacie au coût de \$300,000.00

Les 9,000 pharmaciens du Canada entreprennent une campagne de souscription qui durera deux mois pour ériger un nouveau "Centre de Pharmacie" national, qui sera connu sous le nom de l'Institut canadien de la Pharmacie. Cette campagne est sous l'égide de l'Association pharmaceutique canadienne.

Les plans de l'édifice, qui sera situé à Toronto, renferment des salles de réunion, un musée de pharmacie, une bibliothèque de recherches pharmaceutiques et des bureaux pour l'Association et d'autres groupes de pharmaciens. La bâtisse sera la propriété de l'Association pharmaceutique canadienne.

Congrès international au Chili

L'ambassadeur du Canada à Santiago, fait tenir une invitation officielle aux dentistes canadiens pour le quatrième Congrès international d'Odontologie. Le congrès a lieu à Santiago, Chili, du 16 au 20 novembre. On peut obtenir des renseignements en s'adressant au Comité Organizador y Ejecutivo, Casilla 2575, Santiago, Chili.

Numéro de journal est demandé

La bibliothèque de l'Association dentaire canadienne a grand besoin du numéro d'août 1958 du Journal. L'Association invite les dentistes qui n'auraient pas besoin de ce numéro de les faire parvenir au Secrétariat.

Nouveau fascicule sur la radiation

On vient de publier sous l'égide du Collège

américain de Radiologie et de l'Association dentaire américaine un fascicule intitulé "A Practical Manual on the Medical and Dental Use of X-Rays with Control of Radiation Hazards".

Ce petit volume illustré en couleurs renferme 20 pages et il est divisé en neuf chapitres contenant des remarques générales et spécifiques. Un chapitre est consacré à la radiologie dentaire. On peut en obtenir une copie (.25) en s'adressant au Secrétariat de l'A.D.C.

Rapport de l'Organisation mondiale de la Santé sur la fluoruration

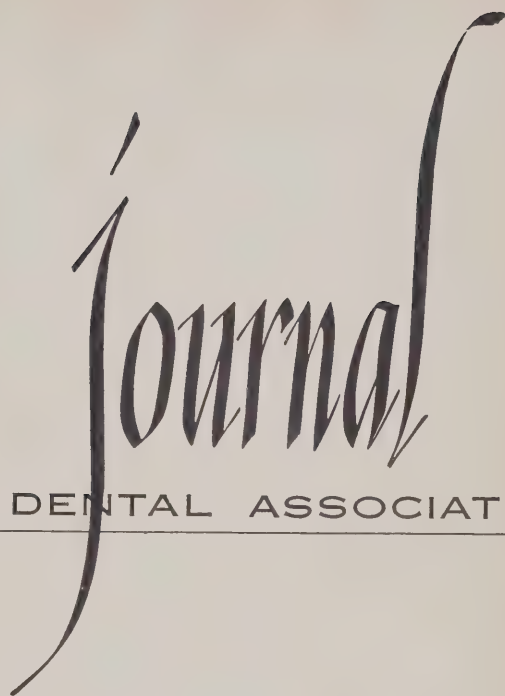
L'Organisation mondiale de la Santé vient de publier son premier rapport de son Comité d'Experts sur la fluoruration. On peut en obtenir des copies (.25 chacune) en s'adressant au Secrétariat de l'A.D.C., 234 rue St-Georges, Toronto, Ontario.

Bottin d'affaires de l'A.D.C.

Le bottin de 1958 renferme une nouvelle section, qui permettra aux membres de l'Association de s'adresser directement aux préposés à différents services, quand ils veulent obtenir certains renseignements spécifiques. Ces renseignements sont les suivants:

Secrétariat général	234 rue St-Georges Toronto 5, Ontario WAlnut 2-0134
Secrétaire	Dr Don W. Gullett
Assistant-secrétaire	M. Ken L. Croft
Journal de l'Association dentaire canadienne	
Rédacteur	Dr Wesley J. Dunn 234 rue St-Georges Toronto 5, Ontario WAlnut 2-4552
A partir du 1er janvier 1959	Dr. Edward R. Bilkey Secrétariat de l'A.D.C.
Rédacteur de Section française	Dr Gérard de Montigny 400 est Blvd. St-Joseph Montréal, P. Qué.
Gérant d'affaires	Dr Don W. Gullett Secrétariat de l'A.D.C.
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OF THE CANADIAN DENTAL ASSOCIATION

A Year in Review*

A. GERALD RACEY, D.D.S., *Montreal, Quebec.*

President's Address

According to the custom and law of our Association there comes a time in the proceedings of each Annual Meeting when the President is required to present himself and deliver a report on the activities which have taken place during his tenure of office. This moment has now arrived.

From a personal standpoint the outstanding activity of the past year was the opportunity afforded me to visit a great number of you during my Eastern and Western tours of the country. Everywhere was displayed the utmost in hospitality and thoughtfulness, and it will always re-

main as one of the most pleasant experiences which good fortune destined for me. The interest and the enthusiasm shown by my confreres for the Association in all parts of the country was most stimulating and I am more convinced than ever that our profession stands in high esteem not only because of what it signifies but because of the individuals who form its ranks.

The past few days have been devoted

*Address of President Racey to the annual meeting of the Association October 27, 1958 in the Queen Elizabeth Hotel, Montreal, Quebec.

to the consideration of the reports and recommendations of our various committees as well as to other business of the Association, details of which will be presented to you in due course for your examination.

I am very pleased to report that a most important activity of your Association, which has been of a continuing nature over many years has now been completed in, what we believe, a very satisfactory manner. I speak of the events which led up to, and finally culminated in the Canadian Dental Association Registered Retirement Savings Plan. Only those familiar with the circumstances can really appreciate the efforts put forth during the past eight years, by those conducting the business of the Association, to secure for the profession deductions from income tax, for the purpose of making payments to a retirement savings plan. To these men we should be ever grateful for the effectiveness of their endeavours, for they played a major role in convincing the federal authorities that this concession should be granted.

Following this, your present Executive Committee had the duty of formulating the Plan, which was done after a great deal of thought and with the advice of an independent firm of economists. This Plan has now been presented to you and we feel it to be a most advantageous one, embracing an element of flexibility which may be readily adjusted to suit individual requirements.

Excellent progress can be reported in the field of Dental Education. Teaching facilities have been increased and enhanced. The new faculty at the University of Manitoba has this fall accepted its first class of dental students. The fine new Dentistry Building at Dalhousie University was officially opened last month. I had the privilege of representing the Association at that time and also the pleasure of witnessing three of our outstanding members in the persons of Dr. Don W. Gullett, Dr. A. J. Coughlan and Dr. Ernest Charron being invested with honorary degrees during the ceremonies. The corner-stone

of the University of Toronto's new building was laid last July 29th. And plans are well advanced, if not already underway, for a considerable expansion of accommodations and facilities at the University of Alberta.

The series of conferences on teaching methods instituted by the Council on Dental Education, with the financial support of the Kellogg Foundation, were completed this year. These conferences were most enthusiastically received by the teaching personnel in all the faculties and I am glad to report that this important activity is being continued.

I have the pleasure to announce at this time the names of the winners of the War Memorial Award essays. They are:—

1st Prize: Jack G. Dale, University of Toronto.

2nd Prize: Paul R. Shunock, University of Toronto.

Honorable Mention: E. V. Dolinsky, University of Alberta.

To these men we offer our heartiest congratulations, and to the judges our sincere appreciation for a difficult task well done.

Considerable activity is taking place in the field of health insurance. As we are rapidly approaching the final phase of the apparent 'step by step' policy of the federal government to introduce full-scale health insurance your Committee concerned with this matter has been actively engaged in studying and formulating ways and means to assist and guide the profession in providing maximum dental care for the people of this country, while at the same time maintaining a quality of service and economic arrangements which would be just and fair to all concerned. This being an age of considerable wealth in our country it has enabled the progress and development of the professions as never before but it also has led to the initiation and development of collective action in the field of health services which must obviously be the deep concern of all professional men.

During the meeting of the Board of Governors just completed, a more than usual amount of interest was taken in the ques-

tion of establishment of dental service corporations particularly due to the fact that such a corporation will be implemented in three provinces on January 1st of the coming year.

The information brought back to us by the Secretary from his European tour in the summer of 1957 has been of inestimable value in our consideration of health insurance matters.

Continuing to be of very disturbing nature is the ever increasing pressure being exerted by non-professional groups in a number of the provinces to secure legislation enabling them by law to practise certain phases of our profession. The past year has been one which has demonstrated a much greater evidence of this relentless activity. Despite the fact that up to the present these pressures have been successfully turned aside, it affords only a breathing spell, for it is anticipated that there will be strongly renewed efforts to obtain this unfavourable legislation. Only by strong leadership and constant vigilance can we hope to combat this ever-increasing danger.

At this point I wish to express on your behalf both 'farewell' and 'welcome'. To Dr. Wesley Dunn, the retiring Editor of our Journal I wish to convey our appreciation and gratitude for the years of faithful and effective service he has given the Association. Under his editorship our Journal has attained a position of prominence enjoying world-wide recognition.

To Dr. E. R. Bilkey I take great pleasure in expressing our welcome as the new Editor. To him I can assure our fullest cooperation at all times in carrying out the important duties of his new position.

Another sincere welcome is extended to Mr. Kenneth Croft, whose services we had the good fortune to secure as Deputy Secretary.

To the Dental Association of the Province of Quebec and the Montreal Dental Club we wish to acknowledge with sincere thanks their courtesy in suspending their annual meetings in order to combine their efforts for this National Convention.

The fluoridation picture continues to improve and we are slowly but surely being permitted to give the population of this country that public health benefit which so rightly belongs to them. The latest statistics show that approximately 1 million Canadian people are now enjoying the advantages of the public health measure of having the water that they drink adjusted to the proper fluoride content. In spite of this improvement, however, our professional duty still remains one of intensive public education pertaining to this important procedure.

Throughout the ages a single constant factor has been present and that has been 'change'. During certain periods in history it has been considerably retarded while in other periods it has shown great acceleration. The past half-century has shown the greatest rapidity of change in the history of mankind. The professions being an integral part of this present dynamic social order have adopted, and must continue to adopt and apply, philosophies commensurate with the times in which we live. During the past fifty-year period of which I speak, the dentist has evolved from the status of craftsman to one of a highly specialized, well-educated member of the health services. His technical skills have been expanded and his educational background and scientific knowledge considerably advanced to keep pace with developments in other health professions. In other words, his professional competence has been maintained to parallel other health services. But is this enough?—for during this same space of time social, economic and political conditions have also shown radical changes which he must accept and to which he must adapt himself, for the practice of dentistry or medicine cannot be isolated from social and human aspects of life.

Our relations with the public and our appreciation of the affairs of our respective communities must continue to be a consideration of paramount importance in our daily activities, for although broader services can now be offered by the professions

and although the public trust has been upheld, nevertheless this has not in any way decreased our responsibilities; rather this has increased the rights and expectations of the public to professional service. What we as individuals do to help in solving social and civic problems as well as our

professional proficiency is the basis upon which we must be judged.

In closing I wish to express my sincere thanks for the honour you bestowed upon me when I became President of this Association—it has been a most happy and stimulating experience.

1414 Drummond St.

A Faculty is Born*

I. MACLAREN THOMPSON, B.Sc., M.B., Ch.B. (Edin.), F.R.S.C., F.R.S.E.**,
Winnipeg, Manitoba

The Manitoba Dental Association has chosen a delightful way of celebrating this important occasion, and I am sure that the large number of guests here present appreciate very warmly this gracious action by our kind hosts.

We are gathered here to celebrate the day on which Manitoba starts to train her own dentists—exactly three-quarters of a century after she began to train her own physicians. The seventy-five years separating the founding of the Manitoba Medical College from the inauguration of the Faculty of Dentistry have led to some interesting differences between the beginnings of the two professional schools.

The presence here of certain distinguished guests betokens that the Faculty of Dentistry is being instituted as a matter of governmental policy, the University being the natural instrument for implementing that policy. How different in 1883;

neither the Government nor the University instigated the founding of the Manitoba Medical College. A handful of Winnipeg physicians not only generated the necessary driving force, but managed the details successfully, and that at a time when Winnipeg had been a city for only ten years; Manitoba as a province was but three years older, and in size was intermediate between its original 'postage-stamp' dimensions and its present magnitude. However, it was not a Faculty of Medicine that was founded in 1883—it was an independent institution, the Manitoba Medical College, and so it remained for thirty-six years; not until 1919 did it be-

*Given by the Manitoba Dental Association, at the opening of the Faculty of Dentistry of the University of Manitoba, September 8, 1958.

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come the Faculty of Medicine of the University of Manitoba.

About that time (and somewhat earlier) that sort of thing was widespread throughout this continent, especially in the United States—separate medical schools were surrendering their independence and becoming university faculties of Medicine. I do not know the history of dental schools, so I shall stick to Medicine for the moment. Why did so many medical schools become medical faculties of universities? In my opinion it was principally because the experience of their graduates showed that if Medicine is to continue to be a 'learned' profession, and to maintain its position in the community, professional knowledge and competence must be permeated (not merely preceded) by the kind of general education that is the business of a university. Of course there are some notable exceptions to this last statement, but they do not invalidate the generalization.

Happily, this is the point at which our Faculty of Dentistry is beginning its history. This is a great challenge and a great opportunity, which I should like to illustrate by brief reference to the Johns Hopkins Medical School. The Johns Hopkins University is but one year older than the University of Manitoba; the Johns Hopkins Medical school is ten years younger than the Manitoba Medical College. How long did it take the Johns Hopkins Medical School to become famous? It had an international reputation on the day it opened its doors. This is the day on which the Manitoba Dental School opens its doors. Should it not at once take a position in the front rank of dental schools? The Hopkins has shown that this can be done—not by imitating other institutions, nor by being too fearful of licensing bodies, but by boldly doing things as we believe they should be done in this Faculty, by living up to our

own ideals as nearly as possible.

In the first year of our new dental course Anatomy looms large—some would say too large! When most physicians and dentists think of Anatomy they naturally think of it as they were taught it. I should therefore like to mention especially to our hosts, the dentists, some of the features of the anatomical study planned for our dental students. In this connection I may mention that for seven years I taught Anatomy to dental students at McGill University, so I am not completely inexperienced in this field.

The central idea animating our teaching is that Dentistry is essentially a branch of the healing art. Therefore our first year dental students will study Anatomy along with our medical students; both groups will attend the same lectures and will work together in the laboratories. To begin with, they will study General Anatomy, i.e., the histology and development of structures found all over the body, such as cells, tissues, bones, joints, muscles, nerves, vessels and skin. Next will come regional study of the chest and the head and neck. Then the dental students will leave us, while the medical students proceed to study the rest of the body. Special courses in Dental Anatomy and Oral Histology are arranged by the Faculty of Dentistry, but members of the Department of Anatomy may participate. In the second year the dental students will return to us for some advanced instruction on anatomical topics of special concern to dentists.

In conclusion, may I be allowed to say how lucky I am to be young enough to participate in this venture—another ten years and I should have missed it! Today we are not reading History, we are making it. May the History that is being made here and now, make good reading in the years to come.

The Role of the Regional Dental Health Director in Development and Implementation of Control Measures

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INTRODUCTION

The dental profession has three main fields of endeavour: treatment, education, and research. As the dental member of the official health agency, the regional dental health director is concerned with all three.

Although the actual provision of treatment is left to the private practitioners, it has been repeatedly demonstrated in Ontario Health Units ^(1,2,3,4 and 5) that the services of the private dentists are not utilized to the best advantage unless there is a vigorous local dental public health program to encourage the population to seek early and regular care. Upon being informed of their children's dental needs through school screening surveys the parents in all the Ontario educational program areas sent their children to the private dentists in many cases for the first time and afterwards regularly. In cold statistics this has resulted in the backlogs of unfilled cavities being reduced to less than fifty percent; but in terms of practical economics there has been a greater gain through reduction of the cost and complications of neglect.

In the realm of public health education the regional dental director's responsibility is to disseminate knowledge regarding known preventives such as water fluoridation which can be instigated as a community project, or the individual control measures such as reduction of sweets between meals ⁽⁶⁾, immediate tooth brushing ⁽⁷⁾, proper diet during tooth development ⁽⁸⁾, or use of topical applications ⁽⁹⁾. These means of reducing dental caries

are all scientifically sound and if fully applied would be capable of eliminating tooth decay as a public health problem. Dental public health is scarcely 10 years old and the seemingly slow initial public response to some types of dental education must not be an excuse for failure to continue urging the use of all control measures. Dentistry, and particularly public health dentistry, is not a business but a profession with the ethical duty to advise the dentally uneducated public what is best for them. In spite of conflicting commercial advertising the public is being reached because fortunately the dental health worker has at least two very powerful avenues of public education unavailable to the commercial interests.

The first of these is without doubt the schools. In Wellington County Health Unit every year since the introduction of the program is 1953 dental control measures have been taught in the classrooms through films, film strips and instruction periods given by the dental director himself. Teaching material and consultations have also been provided to the teachers so that they can give follow-up lessons throughout the term. The actual number of such talks per year in the county has amounted to three or four hundred and the children have little chance of missing the important points. If, being children, they do not always act themselves in accordance with the instructions, there is evidence from the program regions of longer establishment such as Welland, that when in turn these children become

parents or teachers, the recommendations are more seriously applied to the following generation. In this way it is expected that the influence of the dental health education will grow and grow.

The second very important place for dental health education is in the child health conferences where parents bring their pre-school children for medical, nursing, nutritional, or dental consultations. Here the public health dentists or hygienists have an unparalleled atmosphere for serious instruction of the parent regarding dental control measures as related to their own child. The present method is to note some defect, explain how it could have been avoided and then go on to teach the general preventive measures. It will be explained later how more specific diagnostic methods which we hope will come from research will permit the child health conference to be even more effective in the future.

In addition to these direct approaches, the dental health director has supplied dental health column material to the newspapers, given dental talks on the radio, put on four half-hour and ten 15-20 minute television programs about dentistry, and addressed dozens of adult groups such as service clubs, or home and school and social organizations.

The main purpose of this paper is to illustrate the part that the regional dental health director can play in the development as well as the implementation of control measures.

PRACTICAL RESEARCH, AN ESSENTIAL PART OF PUBLIC HEALTH

The concept that public health responsibility involves practical research and development of preventive measures as well as administration is currently receiving much attention and has been the subject of a very timely report by the Committee on Research Policy of the American Public Health Association ⁽¹⁰⁾. Public health is after all a most important national undertaking and it is only common sense that public health authori-

ties should actively seek to improve their own working tools as needed. The alternative is to strive blindly onward with the vague hope that some day more efficient methods will develop as the by-products of other agencies' activities.

In specific medical fields this gap in public health initiative is being filled currently by voluntary societies or foundations which serve to raise public funds and sponsor research projects. Such a national agency has not yet materialized in the dental field but it is on the horizon. Steps are underway to obtain a charter for a dental disease control foundation in the Metropolitan Toronto area and if this becomes a reality it is hoped that similar bodies will develop in other communities forming a nucleus for a national society.

A progressive dental health program directed in the light of information accruing from an annual statistical evaluation system is itself a huge long-term research project. The regional dental health director has at his finger tips the most reliable up-to-date information on disease prevalence, incidence and distribution for a population with which he is familiar and by whom he is known and trusted. Epidemiologic studies, field trials, and clinical tests can be set up almost wherever and whenever it is desired and the results can often be measured in terms of the regular survey procedures. This permits results to be evaluated not only in the academic sense but to be seen also in practical perspective as workable means for improving the dental health of the population for whom the regional director is responsible. Thus research by the dental health worker is not only practical but in several ways offers as great possibilities for bringing about practical dental health benefits as even the Universities where the main interest is still largely the teaching of restorative dentistry. An outstanding illustration of the truth of this statement has been the great part played in developing water fluoridation by such bodies as the United

States Public Health Service, the Canadian Department of National Health & Welfare, the Provincial health departments and the local health agencies. The chief reason for this is probably the fact that the public health agencies are closest to the grass roots of public health and are most aware of the need for improving dental health.

RESEARCH ACTIVITIES OF THE WELLINGTON & HALTON COUNTY DENTAL HEALTH REGION

The following preliminary reports are not meant to list the only, or the most important lines of investigation possible but they do serve to illustrate that research and the research attitude are an integral part of a progressive local health program. Fundamental to the intelligent direction of research effort is the annual statistical evaluation of dental health in the region ⁽¹⁾. The data is gathered by systematic sampling surveys and compiled locally for the use of the regional director so that at all times he is aware of the success of his current projects and the most suitable regions for introducing news pilot studies. As an illustration Table I, from an actual page of the annual cross-sectional collation book for 1954-58. This page alone is worthy of

publication as a research, as are many articles which have appeared in the literature based on small isolated unstandardized surveys. When a study such as an intensive pre-school counselling project is undertaken the evaluation of its success is automatically revealed in terms of changes in any or all aspect of the dental health for the particular area without the necessity of arranging for special surveys.

SPECIAL PROJECTS

In the Wellington and Halton dental health region the emphasis of special research projects has been aimed toward the development of more reliable means of diagnosing the needs of the individual for preventive services. This has been so in both the field of caries control and interceptive orthodontics and the work has been in co-operation with the Dental Statistics and Research section of the Ontario Health Department and the Division of Dental Research of the Faculty of Dentistry in the University of Toronto.

It has been felt for some time that the individual's co-operation in adopting control measures would be greatly increased if the susceptibility of the individual were able to be accurately diagnosed and the prescription for control tailored to the

TABLE I
Dental Care in Fergus Public Schools, 1955-1958

School Year	Grades	No. Examined	Average no. of untreated carious teeth per child.		Percentage of children needing no restorations or extractions
			Decid. Perm.	Perm. only	
1954-55	1 to 8	458	X	X	%
1955-56	1 to 8	499	2.7	1.4	19.2
1956-57	1 to 8	494	2.3	1.1	26.5
1957-58	1 to 8	471	1.9	1.0	33.4
			1.9	0.9	35.2
1954-55	Kindergarten	62	2.8	1.3	30.6
1955-56	Kindergarten	64	2.8	0.5	34.4
1956-57	Kindergarten	64	1.3	0.0	45.2
1957-58	Kindergarten	58	1.3	0.0	50.0

Source: Wellington County Health Unit.

individual's requirements. In this way it would be possible to avoid losing the public's confidence after a very highly susceptible person fails to obtain relief with casual application of general principles of control, or when an individual with high resistance is unjustifiably asked to undergo restrictions which are really only necessary for the most susceptible. Thus the work in caries research has been first to define more carefully the factors and the interrelationship of the factors, associated with caries susceptibility and secondly to adapt the established caries susceptibility tests to field use.

STUDY 1. Definition of Factors Associated with Caries Susceptibility

Characteristics of "Caries Immune" individuals ⁽¹²⁾. Because the usual epidemiology approach to the study of disease has been to compare the sick with the well it was decided as a joint project in Ontario Health Units to gather information on children who were apparently immune to dental caries. There is no scientific way to establish immunity other than by the absence of carious lesions and because chance alone accounts for a fair number of caries free persons at the younger ages, data was gathered only for individuals age 12 to 14 years who had no clinical evidence of dental caries in their mouths. It was not claimed that this Immunity was permanent but it was reasonable that if by this age no caries was in evidence the individual at least had exceptional resistance worthy of study. (Whether a state of true resistance to caries exists in humans similar to that of rats raised on unrefined natural diets ⁽⁷⁾ is not known). Superficial study of these resistant children has been begun in terms of physical and racial characteristics, height, weight, hair, tooth and gingival pigmentation, periodontal health, and nutritional habits. It is interesting that these gross observations have already proved valuable to the Canadian Dental Association Research Committee in regard to the effect of milk

on dental caries because for all these immunes, milk was drunk regularly in amounts from 3 to 6 glasses per day. The use of sweets was also reportedly rare between meals. Much more detailed study of the resistant children is planned and the following study is an example.

STUDY 2. Analysis of Blood and Salivary Urea of Caries Resistant Children ⁽¹³⁾.

In connection with a broader study conducted at the Research Division of the Faculty of Dentistry and the Hospital for Sick Children, Toronto, analysis was done of the salivary and blood urea of 17 of the caries free children and 16 of the susceptible children from the town of Mount Forest. Significantly higher levels of blood urea nitrogen were demonstrated for the caries free children over the susceptible children in the same town. This trend was also apparent though not significantly so in the saliva. It was concluded by Dr. Nikiforuk and Dr. Jackson ⁽¹³⁾ that the higher blood urea was a reflection of a high protein diet (and conversely a low carbohydrate intake) rather than a primary cause of the caries resistance.

STUDY 3. Morphology of Teeth in a Natural Fluoride Region

This study was conducted in co-operation and with financial assistance from the Research Division of the Faculty of Dentistry. The purpose of the study was to explore how fluorides protect teeth. For all (132) children in the Mount Forest Public School ages 9, 10, 11 or 12 years, hydrocolloid casts were made of the lower right mandibular region and their detail dental caries examinations were recorded. Birthplace and previous residence history was obtained from parents to verify the length of exposure to the natural fluorides. Mesial Distal measurements were made of all the cast teeth and for the first permanent molars this was expanded to include the buccal-lingual measurement, measurement of

TABLE II

Greatest Buccal Lingual Dimension at the Gingival Margin of the
Lower Right Permanent First Molars of Children Ages 9, 10, 11 and 12
in Mount Forest Public Schools, 1954

Residency	Males		Females	
	Carious	Non-carious	Carious	Non-carious
Natives.....	11.0389 (18)	10.7750 (16)	10.5105 (19)	10.1500 (14)
Migrants before 5th Birthday.....	10.3000 (5)	10.5000 (6)	10.4100 (10)	10.1000 (4)
Migrants after 5th Birthday.....	10.9286 (7)	10.6333 (6)	10.6333 (6)	10.6750 (4)

Interaction was negligible and residual mean square was 0.320.

Sex difference P .01

Caries difference P .05

—5 versus + 5 yr P .05

Natives versus —5 yr P .05

(n) number of children

cuspid height from the central fossa, and the cuspid width as indicated by points of contact with a flat horizontal plane. Photographic measurements were made of the angles of the central triangular ridges as revealed in cut sections of the casts. For comparison with lifetime fluoride residents controls were selected to be the children who had not resided in Mount Forest or any other fluoride region during the first 4 or 5 years of life. No significant differences in morphology could be detected between the fluoride teeth and the above controls although for both groups decreases in cuspid height and increases in cuspid lip width indicated active wear over the ages 9 to 12. Significant sex differences were detected in tooth size.

An unexpected outcome of this experiment was the detection of very interesting average buccal lingual tooth size difference between the carious and non-carious lower first permanent molars of the continual resident children, see Table II. This was concluded to be concrete evidence of physical pre-disposition to dental caries and was of special interest in relation to the animal experiments of Paynter and Grainger where tooth size

differences were produced by dietary changes during tooth development ⁽¹⁴⁾. Confirmation of this relation between tooth size and presence of decay was sought by examination of records at the Burlington Orthodontic Research Centre and by asking four other Regional Dental Health Officers to send in records from children they routinely examined in the few days following the request. The results are given in Table III and greatly strengthen the original observations in the fluoride region. In two sets of data, a survey of 8th grade children in Toronto schools and measurement of tooth models for older ages in the Burlington Orthodontic Research Centre no significant relation between size and caries could be detected. Some clarification of the disagreement was provided by study of the Red Cross School Meal Study data ⁽¹⁵⁾ available at the Dental Faculty since originally being collected in 1946. This data, Table IV, included radiographs from which mesio-distal tooth measurements were taken, detailed caries records and also for each individual a series of lacto-bacillus test results over a one year period. This comparison suggested 1) that the tooth size influence was stronger for

TABLE III

Relation between the Average Buccal Lingual Gingival Dimension of Lower First Permanent Molars in Millimeters and the Presence of Dental Caries on the Same Teeth of Children, Ages 8-12 years, in Ontario Health Units

Source	Males		Females	
	Decay	No Decay	Decay	No Decay
Burlington 8 Year models, natives...	10.8650 (20)	10.4429 (49)	—	—
Migrants.....	10.6875 (8)	10.5077 (13)	—	—
Brampton Grade 8 ch'n Direct Meas. Examiner A.....	10.374 (19)	10.240 (5)	10.033 (18)	9.950 (4)
Examiner B.....	10.536 (14)	10.350 (2)	10.685 (13)	10.567 (3)
Welland 8 to 14 yrs. Direct Meas. Examiner C.	10.4467 (15)	10.1636 (11)	10.2625 (16)	10.0385 (13)
Grimsby 9 to 14 yrs. Direct Meas. Examiner D.	10.526 (7)	10.425 (4)	10.310 (10)	(0)
Kingston 8 to 12 years Direct Meas. Examiner E.	10.711 (18)	10.343 (7)	10.614 (14)	10.155 (11)

Source: Special surveys submitted by Health Unit Dental Directors, 1956.

children with medium and low lacto-bacillus counts, and 2) that the reverse tooth size caries relation might be true of smooth surface caries rates in a non-fluoride region. It was felt that an explanation of the failure to relate tooth size to caries prevalence in the older children of the Toronto and Burlington regions might be the higher caries attack rates typical of urban non-fluoride regions⁽¹⁶⁾ which overwhelmed the relatively weaker morphological predisposition.

STUDY 4. Assessment of Dental Caries Susceptibility of Multiple Classification Systems.

It was noted in Table III of Study 3 that a better prediction of caries prevalence was obtained by a two-way classi-

fication of the prediction factors than was available from either single factor. A similar advantage was obtained by combining information on fluoridation and lacto-bacillus counts for 135 children ages 11, 12 and 13 years in fluoride and non-fluoride regions of Wellington County, Table V. Because dental caries is a very complex phenomenon the actual number of lesions to develop for any individual is to some extent a matter of chance, but it was considered that knowledge of three or four major factors might be sufficient to permit the underlying average probability of caries developing to be set down. Such a probability value used as an expression of the individual's general susceptibility could be used as a rational basis for prescribing control measures for young children in a preventive dental program. A crude exploratory study of 210 children ages 10

TABLE IV

Mean Number of Carious or Filled Surfaces of Lower First Permanent Molars for Children in Non-Fluoride Region by Cervical Tooth Size, Mean Log. Lacto-bacillus Count, and Type of Surface. Ages 9-13 years

Surface	Cervical Size Mesio-Distal		Log. Lacto-bacillus Count		
	Males	Females	Under 2.3	2.3 to 3.5	Over 3.5
Pitted.....	Over				
	10.4	9.9	2.12 (8)	2.67 (3)	2.70 (12)
	10.4 to 9.0	9.9 to 8.7	1.38 (39)	2.69 (25)	2.28 (114)
Smooth.....	Under				
	9.0	8.7	1.33 (5)	1.00 (3)	2.29 (30)
	10.4	9.9	0 (8)	1.67 (3)	1.20 (12)
	10.4 to 9.0	9.9 to 8.7	0.50 (39)	0.25 (25)	1.03 (114)
	Under				
	9.0	8.7	0.27 (5)	0.0 (3)	1.32 (30)

Source: Red Cross School Meal Study, 1946.

to 14 from Wellington County schools was conducted by recording fluoridation history, lacto-bacillus count, tooth size on bucco-lingual dimension by direct oral measurement, and colour of anterior teeth from a shade guide. Table VI shows how the frequency of attributes supposed to be associated with lower caries incidence is related to actual caries scores for lower first permanent molars. The apparent differences in the relation of pitted surface and smooth surface caries to fluoridation ⁽¹⁷⁾ and the differences in susceptibility and of rates of occurrence after tooth eruption ⁽¹⁸⁾ indicated that diagnosis of these two types of caries might need to be predicted separately.

A practical diagnosis system would entail larger samples, age adjustment and a

search for perhaps more powerful classification factors which in turn would need to be given weights corresponding to their prediction value. This can only be done after extensive study.

A similar device is needed for older children who have already manifested their caries susceptibility, in order to assess the probable caries increment over the next year or so. Obviously if a child has already many decayed, missing or restored surfaces in his mouth he has been proven to be susceptible and so no more objective test is needed. However the oral environmental factor associated with misuse of sweet foods ⁽⁵⁾ as reflected by the lacto-bacillus count, and the status of other factors such as tooth brushing habits ⁽⁶⁾, or use of topical applications

TABLE V

Relative Distribution of Total Caries Affected Teeth Counts, According to Water Fluoridation and Oral Lacto-bacillus Counts for Children 11, 12 and 13 Years of Age in Parts of Wellington County.

D.M.F. and d.e.f. Teeth Per Person	L.A. Count Over 10,000 per c.c.		L.A. Count Under 10,000 per c.c.	
	Non Fluoride*	Fluoride†	Non Fluoride*	Fluoride
0	—	—	17.4	20.6
1	6.7	—	4.3	11.8
2	0.0	—	4.3	17.6
3	10.0	20.0	15.2	5.9
4	13.3	20.0	10.9	20.6
5	16.7	16.0	15.2	8.8
6	16.7	16.0	8.7	11.8
7	6.7	8.0	15.2	2.9
8	10.0	4.0	2.2	—
9	0.0	8.0	0.0	—
10	6.7	0.0	4.3	—
11	3.3	4.0	0.0	—
12	0.0	4.0	2.2	—
13	6.7	—	—	—
14	0.0	—	—	—
15	0.0	—	—	—
16	0.0	—	—	—
17	3.3	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
Mean	6.47	5.68	4.25	2.82
S.E.	0.65	0.70	0.43	0.37
Sample	30	25	46	34

* Salem Village, Peel and Maryborough Twps., and MacDonald Consolidated School.

† Harriston, and Mount Forest.

Source: Wellington County Health Unit, 1956.

(8) etc. can change rapidly and so the previous caries experience need not be a completely reliable index of new caries increment. Table VII shows the magnitude of smooth or pitted surface caries increments over a one-year period according to the total previous caries experience, and the age of the children. Individuals with no previous caries have an almost complete absence of decay in the next year as well. Those with slight previous caries tended to get a few caries in the next year. The most caries increment seemed to occur for those with a medium to medium-high previous experience. Those with the highest previous experience showed if anything smaller average caries increments than the medium group due no doubt to the lack of

available surfaces for new decay. In the groups there is a tendency for those with high current lacto-bacillus counts to get smooth surface increments but the bacterial count has less relation to new pitted surface lesions. From the shift in the frequency of children with high lacto-bacillus counts according to previous caries it can be seen that zero score for previous caries is almost a sure sign of a current low bacterial count. Future refinement of this method of assessing probable caries increment over the next year seems to give hope for clearer clinical assessment of the control measures which might be prescribed to meet the needs of an individual patient. Table VII also seems to verify the importance of Study 1 concerning attributes of the com-

TABLE VI

Average Caries Scores for Lower First Permanent Molars of 210 Children, Ages 10 to 14 Years
Classified According to Presence of Attributes Commonly Associated with Caries Resistance

Average no. of carious surfaces on lower per- manent molars	Fluoridation + since birth — no F.	Lacto-bacillus + under 1000 — over 1000	Bucco-Lingual Tooth Size + in small quartile — large or medium	Colour + yellow — grey or brown	Number of Attributes
0.70	+	—	+	+	3
0.75	+	+	—	+	3
0.75	—	+	+	+	3
0.86	+	+	+	+	4
0.91)	—	—	+	+	2
0.91)	+	—	+	—	2
0.93	+	+	—	—	2
1.06	—	+	—	—	1
1.29	+	+	+	—	3
1.32	+	—	—	+	2
1.39	—	+	—	+	2
1.50	—	+	+	—	2
1.55	—	—	—	+	1
1.59	+	—	—	—	1
1.68	—	—	+	—	1
1.86	—	—	—	—	0

pletely caries free persons because once susceptibility has been established by previous caries experience the actual number of new lesions to develop over a given interval may be highly subject to chance and hence never closely predictable.

STUDY 5. *Influence of an Alkaline Mouth-wash on Lacto-Bacillus Counts.*

On the other hand it was postulated that the aciduric organisms which are responsible for positive lacto-bacillus tests and Snider tests might not thrive at higher pH values. Hence the counts might be reduced by using an alkaline mouth-wash. The abundance of lacto-bacilli in the saliva of persons using highly fermentable foods has been amply demonstrated, and that if the highly fermentable foods are completely withdrawn for a period of a few weeks the aciduric organisms disappear. (This is by removing the substrate). An experiment was set up to test if buffering of the oral acid by sodium bicarbonate rinses three times a day and before retiring would reduce

the lacto-bacillus counts without dietary control. This was checked for 35 children in the Elementary School in Mount Forest over a three-month period when 1 teaspoonful of bicarbonate in water was used as a mouthwash. There was a substantial decrease in lacto-bacillus counts or an increase in yeast overgrowth which is indicative of a shift in oral flora toward high pH values. The experiment suggests that longer term testing of buffering mouth washes should be carried out with the idea of producing more rapid reduction of high lacto-bacillus counts than are possible with diet alone.

STUDY 6. *A Modification of the Snyder Test suitable for use with pre-school age children was tested for 30 children age 10 to 12 years in Harriston School, Georgetown, Halton County and 178 children age 4 or 5 years in Thorold, Ontario.*

A sterile cotton applicator was used to wipe the buccal segments at the gingival region of the teeth. The swab end of the applicator was then broken off into the

TABLE VII

Average Caries Increment in One Year by Previous Caries Totals,
Lacto-bacillus Count, and Type of Surface for 400 Children in
Wellington County Elementary Schools

Age	Previous d.e.f. & DMF Total	Pitted Surface Increments		Smooth Surface Increments	
		Present l.b. count under 10,000	Present l.b. count over 10,000	Present l.b. count under 10,000	Present l.b. count over 10,000
9 to 11	0	0.0 (13)	0.0 (1)	0.0 (13)	0.0 (1)
	1-3	0.84 (24)	0.63 (19)	0.92 (24)	0.68 (19)
	4-7	0.62 (42)	1.16 (38)	0.45 (42)	1.08 (38)
	8-11	0.87 (15)	0.79 (34)	0.67 (15)	0.76 (34)
	11+	0.50 (4)	1.15 (13)	1.00 (4)	0.38 (13)
12 to 14	0	0.0 (9)	1.67 (3)	0.22 (9)	0.0 (3)
	1-3	0.40 (30)	0.73 (15)	0.27 (30)	0.47 (15)
	4-7	1.10 (39)	1.24 (54)	0.46 (39)	0.80 (54)
	8-11	1.60 (10)	1.31 (26)	0.80 (10)	0.92 (26)
	11+	1.0 (1)	1.30 (10)	0.0 (1)	0.80 (10)

(-) number of children in specific group.

tube of semi-solid Synder test media (0.25% agar) and incubated. Results of the tests are shown in Table VIII for the pre-school children in Thorold. The indication is that the swab test leads to reliable and more rapid results because the concentration of plaque material in the swab permits rapid acid production without any retarding salivary action and secondly because the standardized swabbing leads to a higher degree of control than use of a volume of heterogeneous saliva. It is planned that this direct swab test or some further technical simplification may be used to increase the interest and accuracy of teaching preventive measures

in the Child Health conferences and in the Schools.

DISCUSSION

There seems to be no doubt that the Regional Dental Health Director can play a major role in the conduct of practical dental research in preventive measures along with his regular administrative and service duties. The research should be of the field study type aimed at improvement of conditions and control measures of the local population under the direct supervision of the regional director. For this purpose the educational background of the dental health worker must include

TABLE VIII

The Reduction in Mean D.M.F. Tooth Counts for Native Born Children, 11, 12, and 13 Years of Age, According to Water Fluoridation and Rural, or Urban Residence in Wellington County Health Unit, 1954.

	Municipality	F. p.p.m.	Number Examined	Mean D.M.F. Tooth Count
R U R A L	Nicol and Pilkington Twps.	0	147	5.1
	Arthur and West Luther Twps.	Trace	156	4.1
	Guelph and Puslinch Twps.	0	168	5.6
	Maryborough and Minto Twps.	0	132	5.2
	Erin and West Garafraxa Twps.	0	161	5.6
	Eramosa Twp.	0	93	7.2
U R B A N	Fergus	0.6	117	4.8
	Harriston	0.8	37	3.4
	Mount Forest	1.2	53	3.6
	Arthur	1.4	22	2.3
	Palmerston	0	40	5.3
1944		0	—	6.2
Brantford City—1954		1.2	—	3.6

Source: Wellington County Health Unit, 1954, and Brantford City Dental Records, 1944 and 1954.

TABLE IX

Swab Test Results Related to Total Decayed Missing or Filled Teeth for 178, 5-Year-Old Children at Thorold, June, 1958.

Colour Scale at 48 Hours

Acidity of Media after 48 hours incubation as judged by Lamotte colour standards.

d.e.f. teeth	pH 4.2 to 4.6	pH 4.0	pH 3.8	pH 3.6
0	14	26	23	8
1		7	—	3
2		5	4	11
3		1	5	9
4	1*	3	5	9
5			3	8
6		2	3	7
7		1		7
8		1	1	6
9		1		
10			2	1
11				1
Average	0.26	1.47	2.07	4.1

* This tube went from 4.2 to 3.6 in next 24 hours hence the reading may have been inaccurate at 48 hours.

courses in elementary research and epidemiological methods as well as the traditional basic science courses such as bacteriology, physiology, etc. An up-to-date knowledge of current research literature is a necessity not only for the intelligent guidance of the public health program but also for the background upon which to base research studies.

Co-operation of a university or provincial government research division is highly desirable from the viewpoint of processing complicated data and provision of special equipment when needed. For the local dental department certain elementary laboratory equipment such as incubators, autoclaves, refrigerators etc. for conduct and analysis of saliva tests may be considered to be necessary.

SUMMARY

The role of the Regional Dental Public Health Director has been reviewed in relation to treatment and public health education. In addition practical research into improvements in preventive dental practices has been described as being vital to the development of a progressive public health program. The first hand knowledge of all conditions which prevail in the local health region through the regular statistical evaluation surveys, the easy access and the co-operation obtainable from a population which is interested in helping to improve its own conditions make for an ideal field research.

The type of field research which may be conducted as part and parcel of the dental health program has been illustrated by six preliminary studies in co-operation with the Provincial Government research consultant and the members of the University research staff. Recommendations have been made for Dental Public Health directors to be given the best possible educational background and some elementary equipment for conduct of field studies.

ACKNOWLEDGMENTS

Acknowledgment is owing to Dr. K. J. Paynter and Dr. Gordon Nikiforuk of the University of Toronto Research Division for assistance in field studies and use of some of their data in this paper. The work of other regional dental directors has also been referred to in this paper. They are as follows: Dr. R. A. Connor, Dr. J. W. Lawrence, Dr. R. Feasby, Dr. F. Compton, Dr. C. Coburn. We wish also to pay tribute to Mr. J. Percy of Ontario Provincial Laboratory Service who has made possible the development of the swab test by preparing the new media and advising on the laboratory aspects of the lacto-bacillus and Snyder tests. Last and not least we wish to thank Dr. L. Sturgeon and Dr. S. L. Honey of the Welland and District Health Unit for their co-operation in arranging for field trials of the swab test in Thorold, Ontario.

REFERENCES

1. Grainger R.M., Sellers A. H. The Welland and District Health Unit program. Canadian Journal Public Health, October 1956.
2. Connor R. A., Grainger R. M., The St. Catharines-Lincoln Dental Public Health Program, J.C.D.A., September, 1956.
3. Coburn C. I., Grainger R. M., Health Education in Relation to Dental Care Needs and Demand in the Elgin-St. Thomas Unit Area, J.C.D.A. January, 1957.
4. Grainger R. M., Research and Dental Health, J.C.D.A. November, 1952.
5. Lawrence J. D. M., J.C.D.A. December, 1957.
6. Vipeholme Dental Caries Study, Acta Odontologica Scandinavica Vol. II, No. 3, 4 September, 1954.
7. Fosdick's Brushing Study, J.A.D.A. Vol. 40, 1950, 133. The Reduction of Incidence of Dental Caries. I. The Immediate Toothbrushing with Neutral Dentifrice.
8. Shaw J. H., Nutrition and Dental Caries, J.A.M.A. February 8, 1958, p. 633.
9. Meuhler Topical Stannous Fluoride, J.A.D.A. Vol. 46, March 1953, p.p. 290-295.
10. American Public Health Association, Committee on Research Policy, April 1958 A.J. of P.H. pp 503-507.
11. The Evaluation of Community Dental Health—Second Revision, Ontario Department of Health, 1953.
12. Natural Immunity to Dental Caries—Grainger R. M., Lawrence J. W., Connor R. A., Jarrett M. E., Coburn C. I. Report read at O.P.H.A. Convention, September 1955.
13. Nikiforuk G., Jackson S. H., Cox M. A., Grainger R. M., Some blood and Salivary Non-Protein Nitrogen Constituents in Children and Dental Caries. Journal of Pediatrics, Vol. 49, No. 4, p.p. 425-431, October 1956.
14. Paynter K. J., Grainger R. M., The Relation of Nutrition to the Morphology and Size of Rat Molar Teeth, J.C.D.A. September 1956.
15. Ellis R. G., Red Cross Meal Study, J.O.D.A., February 1953.
16. Dental Condition Among Elementary and Pre-School children, 1951-56. Dental Statistics and Research Section, Division of Medical Statistics, Ontario Health Department, June 1957.
17. Ast. D. B. Finn, S. B. Kingston-Newburg Caries Fluoride Study, A.J.P.H., Vol. 40, June 1950, p. 716.
18. Reid D. B. W., Grainger R. M., Variations in the Caries Susceptibility of Children's Teeth, Human Biology, Vol. 27, No. 1, February 1955

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Pre-School Dental Inspection with Parent Consultation

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The following comments pertain to an experimental project, approved by the Board of Education and the Board of Health of the Township of Scarborough, Ontario, and carried out at eight public schools, during four weeks of the month of July, 1958.

The project is termed experimental in that this was the first attempt to carry out a dental consultation program for children ages 2 to 5 years in this township. Also in contrast to the usual procedure of tying into another scheduled year-round activity such as Well Baby Clinics, this project utilized a month free from school time.

With a dentist and a hygienist available, conferences were held in two schools simultaneously, each lasting one week, with daily hours from 9.30 a.m. to 3.30 p.m. The eight schools, chosen at random, were scattered throughout the township for the convenience of the residents.

From a potential of about 15,000 children, it had been hoped that at least 1,000 (about half of maximum capacity) would attend. Total attendance for the eight clinics was just over 700 children. The pattern of attendance for each of the four weeks was quite similar—a gradual build-up to a peak at mid-week and then a decline. The one exception to this pattern was when during the third week, a mid-week news story appeared in a large daily newspaper and resulted in capacity attendance for the next two days. Attendance was greater in mornings than in afternoons.

It became apparent that the method adopted for publicizing the project had been inadequate. During the month of June, most of 30,000 announcements were given to the pupils of elementary schools and some were placed in the waiting rooms of the local dentists. Frequent announcements were broadcast, free of charge, from one radio station. It was hoped that mothers, so informed, would pass the word along to those with no school-age children. Many parents who attended, intimated that they had learned of the clinics in this manner. But, there must have been many others who did not know of their existence. There is no doubt that planned, paid coverage in the large daily newspapers would have been the more direct approach.

From the general attitude and the many complimentary remarks, and with no known criticism, it was apparent that the parents appreciated the service. They were interested in discussing habits and remedies; oral hygiene; the unwise use of sugar-foods between meals. From these discussions it was disclosed that the habit of eating raisins daily, as a snack between meals, has become quite prevalent among the young pre-schoolers, with mothers not realizing that raisins are a sugar-food (64% sugar) and can cause rampant dental caries.

As to be expected, the parents were par-

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ticularly interested in whether a dental examination would disclose defects, either in teeth or in facial development. The data as shown, denotes the state of dental health for the children examined. It is most likely that these children belong to a biased segment of the population—above average in interest and perception. It can be assumed that the average state of dental health for the pre-school children in the township will not be better than that shown.

The attendance at this initial conference and the manner in which the service was accepted, indicated a need that could be fulfilled by repeating similar four week

conferences every six months — for example, every January and every July.

To a preventive dental programme, children aged 2 to 5 years are the most important segment of the population. To devote 80 days of each year to their behalf is not unwarranted. By choosing certain schools as permanent sites for regularly-held conferences, stability in the time-table and the locations would help build up the project in the public consciousness. In due course, the efforts expended here, would be reflected in an improved state of dental health in the school-age segment of the population.

PRE-SCHOOL DENTAL INSPECTION—JULY 1958 TOWNSHIP OF SCARBOROUGH

AGE 2 YEARS

Number of children examined.....	142		
Caries immune (perfect teeth).....	137	—	96.4%
Satisfactory (no defects).....	114	—	80.2%
Abnormal position of teeth/jaws.....	24	—	16.9%
Number with open cavities.....	5	—	3.5%
5 children have.....	15	open decayed deciduous teeth	
0 children have.....	0	prematurely lost deciduous teeth	
0 children have.....	0	filled deciduous teeth	
Total decayed, extracted, filled teeth.....	15	deciduous teeth	
Average per child 0.105 teeth			

AGE 3 YEARS

Number of children examined.....	222	.
Caries immune (perfect teeth).....	166	— 74.8%
Satisfactory (no defects).....	154	— 69.4%
Abnormal position of teeth/jaws.....	25	— 11.4%
Number with open cavities.....	53	— 23.8%
53 children have.....	158	open decayed deciduous teeth
2 children have.....	2	prematurely lost deciduous teeth
4 children have.....	9	filled deciduous teeth
Total decayed, extracted, filled teeth.....	169	deciduous teeth
Average per child 0.75 teeth		

AGE 4 YEARS

Number of children examined.....	190	
Caries immune (perfect teeth).....	101	— 53.1%
Satisfactory (no defects).....	94	— 49.3%
Abnormal position of teeth/jaws.....	21	— 11.0%
Number with open cavities.....	86	— 45.2%
86 children have.....	331	open decayed deciduous teeth
5 children have.....	19	prematurely lost deciduous teeth
10 children have.....	31	filled deciduous teeth
Total decayed, extracted, filled teeth.....	381	deciduous teeth
Average per child 2.00 teeth		

AGE 5 YEARS

Number of children examined.....	134	
Caries immune (perfect teeth).....	46	— 34.3%
Satisfactory (no defects).....	50	— 37.3%
Abnormal position of teeth/jaws.....	17	— 12.7%
Number with open cavities.....	82	— 61.2%
82 children have.....	290	open decayed deciduous teeth
10 children have.....	20	prematurely lost deciduous teeth
21 children have.....	92	filled deciduous teeth
Total decayed, extracted, filled teeth.....	402	deciduous teeth
Average per child 3.00 teeth		

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Dentistry in Europe

Just prior to the Rome Congress last fall, Dr. Don W. Gullett, Secretary of the Canadian Dental Association made visitations to several European countries. He was able, even in a short visit, to develop interesting and factual reports relative to dentistry in these countries. Short visits, however, do not permit complete investigations and consequently Dr. Gullett has entitled this series of reports "Notes on Dentistry in Europe".

This is the last report in the series "Dentistry in Europe". Previous issues presented dentistry in Norway, Sweden, Finland, and Denmark. "Dentistry in Holland" concludes these reports.

Editor.

Notes on Dentistry in Holland

DON W. GULLETT, D.D.S., Secretary, Canadian Dental Association.

Population: 11,000,000

No. of Dentists: 2,500 (15% female)

Ratio to population: 1/4800

SOCIAL DENTISTRY

The health insurance system is in the form of Sick Funds, similar to that of Denmark. These funds have a long history in the form of voluntary sick benefit insurance but were transformed into compulsory insurance by legislation in 1941 for all under a certain income. Today about 80% of the population are insured against the financial sequelae of illness and the income limit is about 7,000 guilders per annum. Membership in a Sick Fund entitles the member and his family to medical treatment, pharmaceutical supplies, hospital and dental care.

DENTAL BENEFITS

Services for children up to age 21 are free. Emergencies are free. Over age 21 the patient pays part of fee in accordance with a fixed schedule. (E.g. If filling costs 4½ guilders patient pays 1½ guilders and the balance is paid from fund.)

SPECIAL FEATURE

The scheme in Holland places a premium on being dentally fit (keeping free of defects). If patient keeps regular appointments every six months fillings are free but he must pay for dentures. If patient neglects regular visits (6 months) then he must become dentally fit at his own expense before being taken back into the scheme. As a result of this premium 25% of the population are said to be dentally fit at the present time. While the percentage cannot be regarded as optimal, it is considered encouraging. It is estimated that 17% wear dentures and children under 6 years are not included in this percentage. This is an outstanding feature of the Holland scheme and very favourably regarded by the profession and all concerned. Over the years statement is made that it has worked out well. Dentally fit individuals are issued a health card. Holders of such cards have special financial advantages in the plan. Emphasis is placed on the younger age groups. Recently a new regulation was adopted stating that after 40 years of age no patient can be classified as dentally fit.

FINANCING

The whole scheme is financed by membership fees paid by members to the Sick Funds and these funds are heavily subsidized by the government. Dentists are paid by the Sick Funds on a fixed fee schedule which is negotiated between representatives of the sick funds and representatives of the profession. The lack of appreciation of dental services among representatives of the sick funds has resulted in unrealistic fees. The fee schedule is so low that dentists are forced to work long hours on a quantity basis in order to make a living. The average gross income of dentists is probably 40,000 to 50,000 guilders* a year and taxation is high.

Since 1946 the Netherlands Dental Association has been almost uninterruptedly negotiating with the Sick Fund Organizations. These negotiations have produced practically no result. The Association has employed expert economists in an effort to achieve a reasonable net income within a normal number of working hours a year for dentists. Arbitration was refused by the Sick Funds.

PERSONNEL

The ratio of dentist to population is anything but good, being one dentist to 4,800 of the population. Out of the 2,500 dentists, 1,500 work under the scheme, some 300 to 400 work in the school dental services and the balance are in private practice. A real lack of applicants for the dental course exists and the Association is endeavouring to institute a recruitment drive. It is said that the chief reason for this whole situation is the low income of dentists.

AUXILIARY PERSONNEL

No training courses for dental assistants exist in Holland and there are no dental hygienists. A training program for technicians by apprenticeship is carried out with examinations for qualification. In order to become a laboratory owner the technician must meet additional requirements of a higher standard.

ORTHODONTIC SERVICES

In several European centres orthodontic treatment is rendered upon a mass principle. One day was spent at such a clinic in Holland. This particular clinic is operated as a part of private practice as the health scheme in Holland does not include orthodontic services. The clinic is open daily from 11.00 a.m. to 2.30 p.m. with four orthodontists. Each orthodontist sees from 15 to 20 patients an hour, there being some 4,500 children undergoing treatment at this clinic at the time of my visit. All appliances used are removable ones. The charges are minimal with a maximum for any one case of 200 guilders (\$52.00). Any case not completed within 2½ years is carried free until finished. Models were shown illustrating excellent results. The apparent philosophy behind orthodontic service in this form is an 85 to 90 per cent correction for a great many rather than attempting 100% correction for a few.

DENTAL EDUCATION

Holland has two dental schools namely the Dental Institute of the University of Utrecht and the Groningen Dental School of the University of Groningen. Both schools are departments of the Faculty of Medicine of each university. The Utrecht school has been established for a great many years (1887) but the Groningen school is new, being established in 1947. Up to 1947 the Utrecht school was a state school and degree was a state degree which older dentists in Holland possess. Those graduating 1952 (first final examination after change) and since possess a university degree. (Tandarts) The relationship of the schools is through the medical faculty to the university authorities with no direct relationship to the state. The university Board of Governors designates amount for dental schools in budgets and it is said there is no trouble in receiving reasonable requests chiefly owing to the great demand for dental graduates. However, the salaries of staff members are paid directly by the government and members of the staff rank as civil servants the same as other employees

*Value of guilder in 1957 was 26 cents.

of the government. It is anticipated that a new school will be built at Utrecht in the near future. The present building is old, with crowded conditions.

Academic requirement for admission is the same for all university courses. The dental course is six years in length, the first two years being known as selective years. At the end of the first year students may transfer to another course in the university with credit standing. Utrecht accepts 100 students (Groningen 45) in the first year but only has clinical facilities for 60 (Groningen 30) and the original number is cut down on a basis of academic standing by the end of the second year.

The academic year is from the beginning of September to the end of June with approximately three months' holidays occurring during the calendar year. The clinic operates on a twelve month basis. Students have set clinic requirements to meet during the holiday periods and rotate in the clinic. After requirements are met it is optional for the student to remain full time in the clinic.

The chief difference in curriculum at Groningen, as compared to Utrecht, is that the first two years of the dental and medical courses are exactly the same. The balance of the Groningen course is the same as at Utrecht.

Hospital relationship is established whereby students are assigned for six weeks to attend a surgeon at hospital for major oral surgery operations. All minor oral surgery is performed at the school.

The annual academic fee for dental students is 200 guilders with a tendency to decrease it. Students purchase their own instruments (total cost approximately 6,000 guilders) and it is expected that the

government will rebate 3,000 guilders. Owing to the need for dental graduates in order to operate the health scheme the government is inclined toward generosity for dental education.

The staff of the Utrecht school consists of 10 full time (4 professors, 4 scientific collaborators and 2 lecturers) and 47 part time personnel. Students are trained to perform technical work and then are permitted to turn this work over to technicians, there being 11 technicians and one chief technician employed at the Utrecht school.

The university degree of Tandarts is granted at graduation and this title is restricted by law to persons authorized to practise dentistry. A higher degree of Doctor Medicinæ Dentariare may be awarded on presentation of a thesis.

COMMENT

1. In spite of strenuous efforts on the part of the Netherlands Dental Association payments to dentists are so low that dentists are forced to work long hours on a quantity production basis.

2. This economic situation has created a serious shortage of dentists.

3. On the other hand it was reported that the government has been generous in supporting dental education and in establishing additional teaching facilities.

4. As far as known Holland is the only country with a special provision for those who keep dentally fit. This is attractive from the preventive standpoint. However there was considerable discussion on the point at the time of my visit. In order to retain classification as dentally fit the patient must keep regular appointments. The dentist only gets paid for rendering some service and if no service is required spends a great deal of his time examining these patients.

5. Dental services are rendered in private offices for the most part. In some of the larger towns services are also rendered in polyclinics.

At the end of three years a single application of a freshly prepared 8 per cent solution of stannous fluoride applied once each year has been shown to be significantly more effective in reducing dental caries in children than a series of four applications of a 2 per cent sodium fluoride solution applied at the beginning of the three year study period. These clinical results again indicate a marked advancement in topical fluoride treatment for use in preventive dentistry due to a saving in clinical time, cost, convenience to patient and parent, as well as an increase in clinical effectiveness.

Charles W. Gish, D.D.S. et al.

Journal of Dentistry for Children, Third Quarter 1958.

The Canada Estate Tax Act

The Royal Trust Company has prepared an analysis of the principal amendments to Federal inheritance taxation as presented in the new Canada Estate Tax Act. The Royal Trust Company would be pleased to be consulted by anyone seeking further or more specific information relative to these provisions.

The effective date of this legislation has not, as yet, been stated.

Editor

Persons domiciled in Canada

PREVIOUS TAXATION—A DUTY ON SUCCESSION

The Government of Canada has levied taxes on inheritances since 1941, in which year it first entered this field of taxation by imposing tax, or duty, on property passing to a beneficiary, the amount of the tax being based not only on the size of the Estate, but also on the relationship and sometimes on the age of the beneficiary, and the amount of the benefit. This was a tax on the person who inherited in respect of the succession passing to him, and was called Succession Duty. If the testator wished the tax to be charged to his Estate rather than to the individual legatee, it was necessary for him so to direct in his Will.

NEW TAXATION CHARGED AGAINST THE ESTATE

Under the new Estate Tax Act, the tax is levied against the Estate, rather than against the beneficiaries, and the rate of tax is determined solely by the value of the Estate. When the testator is survived by a spouse and minor children, the new Act provides for certain deductions from the taxable value of the Estate, and amounts bequeathed to charity may also be deducted. After deductions of this sort have been made, all Estates of the same

value will be liable for tax at the same rate.

PROVINCIAL SUCCESSION DUTY IN PROVINCES OF QUEBEC AND ONTARIO

The Provinces of Quebec and Ontario are the only provinces levying inheritance taxes in addition to the Estate Tax payable to the Government of Canada. All the other provinces have entered into agreements with the Federal Government under which they withdrew from the inheritance tax field for the duration of the agreements, in exchange for financial compensation.

The inheritance tax in the Provinces of Quebec and Ontario is a Succession Duty charged against the beneficiary, as was the tax in the federal field before the new Estate Tax Act. In certain circumstances, however, the Quebec Succession Duty Act permits duty to be charged against the capital of the Estate even if the Will does not so provide. For example, where the income of an Estate is left to a revenue beneficiary, the duty on such bequest may be charged to the capital of the Estate.

COMING INTO FORCE

The new Act received Royal Assent on 6th September, 1958, and will come into force on a date to be proclaimed by the Government of Canada.

REDUCTION IN CANADA ESTATE TAX
BECAUSE OF QUEBEC OR ONTARIO
DOMICILE OR SITUS

The new Canada Estate Tax Act provides for a reduction by one-half of the tax imposed on the Estates of persons domiciled in the Provinces of Quebec and Ontario. In such Estates passing to a spouse or in the direct line, this reduction largely offsets the duty imposed by the province.

Also, in Estates of persons domiciled in the other provinces, the new Act provides for a reduction of one-half the federal tax payable in respect of property situated in the Provinces of Quebec or Ontario.

Under the new Act these reductions are available whether or not provincial duty is paid, which was not so under the old Canadian Succession Duty Act.

DEDUCTION OF FOREIGN TAXES

The new Act provides that tax paid to a foreign government may be deducted from the tax payable subject to the limitation of the deduction to the amount of tax payable under the Canada Estate Tax Act in respect of the property on which the foreign tax was paid. Under the old law, this credit was allowed only in respect of taxes levied by countries with which Canada had entered into a succession duty agreement.

TAX ON FOREIGN REAL ESTATE

Previous to the new Act, foreign real estate owned by Canadians was not subject to succession duty. The new Act provides for the taxation of such real estate in the Estates of Canadians holding such property.

PENSIONS, ANNUITIES AND VOLUNTARY
EMPLOYEE PAYMENTS

Although there is no change in the taxation of pensions and annuities, there is an important change in respect of voluntary payments by an employer to survivors of a deceased employee. Under the new Act, this form of death benefit is taxable, whereas under the old Act it was not.

EFFECT ON EXISTING WILLS

As mentioned above, under the Provincial Succession Duty Acts (Ontario and Quebec) and the old Canada Succession Duty Act, liability for duty falls on the beneficiary. In order that this would not happen, that is, in order that the tax burden would not fall on individual beneficiaries, many testators have already provided in their Wills that death duties are to be charged to the capital of the Estate. These Wills are therefore in line with the new Canada Estate Tax Act which charges the tax to the Estate, and such Wills should in this respect require no change.

On the other hand, where a testator's intention is that the tax should fall on his beneficiaries, he will not have directed in his Will that Death duties are to be paid out of capital. In such Wills, the effect of the new Act will be that tax will be charged to the capital of the Estate rather than against the beneficiaries as intended by the testator, so that these Wills must be altered if the original intention is to be carried out.

DEDUCTIONS WHERE WIDOW AND
CHILDREN SURVIVE

The basic exemption under the new Act is \$40,000. Where a widow, of an *infirm* husband and a child under 21 years of age, or otherwise dependent, survive, this exemption is increased to \$60,000, with an additional \$10,000 for each such child. Where no spouse survives, the exemption for each dependent child is \$15,000. For example, where the net aggregate Estate amounts to \$90,000, and a widow and two minor children survive, a total of \$80,000 may be deducted from the taxable value of the Estate, leaving a net taxable Estate of \$10,000.

An interesting aspect of the new Act is that the foregoing deductions may be taken whether or not the surviving widow or children actually benefit.

Under the old Succession Duty Act, a widow was granted an exemption of \$20,000, plus \$5,000 for each dependent child,

less the value of any benefit passing to any such child.

A net Estate under \$50,000 is not taxed under the new Act, nor was it under the old Act.

THE NOTCH PROVISION

Under what is called the notch provision, a formula is provided that prevents the tax on Estates that are slightly in excess of \$50,000 in value from being more than one-half of the excess over \$50,000, and eliminates tax on Estates of less than \$50,000. For example, in an Estate having a net value of \$52,000, and assuming the minimum personal exemption of \$40,000, the tax according to the table of rates in the Act works out to \$1,380, but by the application of the notch provision the tax payable will be reduced to \$1,000, this being one-half the amount by which the net value of \$52,000 exceeds \$50,000.

As a further example, in an Estate hav-

ing a net value of \$51,000, and assuming the minimum personal exemption of \$40,000, the tax according to the table of rates in the Act works out to \$1,240, but by the notch provision will be reduced to \$500, or one-half the amount by which the net value of \$51,000 exceeds \$50,000.

The notch formula is not applied in Estates having a net value of more than \$53,056. Above that figure, the tax according to the rates in the Act does not work out to more than half the excess over \$50,000 except in very large Estates, in which it is not the intention of the Act to reduce the tax.

The new notch provision is different from that in the old Act, which merely provided that the duty could not be greater than the amount by which the Estate exceeded \$50,000 in value.

LIFE INSURANCE

The new Act broadens the conditions un-

TAX COMPARISONS*

		Quebec and Federal		Ontario and Federal		Other Provinces Federal Only		
		Old	New	Old	New	Old	New	
1. All to Wife	Estate of.....	100,000	13,880	11,100	14,505	11,725	11,760	6,200
		200,000	41,330	34,300	42,398	35,386	42,660	28,600
		500,000	155,980	135,650	150,355	130,025	156,960	116,300
		1,000,000	419,630	382,650	396,630	359,650	379,260	305,300
2. Life interest to Wife—age 50. Residue to 2 children under 18.	Estate of.....	100,000	11,841	9,300	10,670	8,129	7,862	2,600
		200,000	34,364	31,900	31,637	29,173	28,728	23,800
		500,000	137,131	132,450	120,402	115,723	119,262	109,900
		1,000,000	388,247	378,450	324,304	314,507	316,495	296,900
3. All to 1 Brother, Sister, Nephew or Niece	Estate of.....	100,000	25,350	21,100	27,590	23,340	18,700	10,200
		200,000	63,033	52,133	68,500	57,600	55,400	33,600
		500,000	200,084	169,784	214,750	184,450	183,500	122,900
		1,000,000	496,833	440,283	525,500	468,950	427,000	313,900
4. All to 1 Stranger or Remote Relative	Estate of.....	100,000	32,350	27,100	32,225	26,975	20,700	10,200
		200,000	78,700	65,800	79,700	66,800	59,400	33,600
		500,000	238,000	202,700	268,625	233,325	193,500	122,900
		1,000,000	568,500	501,950	661,000	594,450	447,000	313,900

The above examples show that under the new Act Estate tax, generally speaking, will be lower than under the old Act.

der which the proceeds of insurance on the life of the deceased are subject to tax. Generally speaking, such proceeds are taxable under the new Act if the deceased owned or controlled the insurance policy, either alone or jointly with another person in the manner or degree set out in the Act, such as, for example, through a trustee under a trust controlled by the deceased, or through a corporation controlled by the deceased, where the whole or a part of the proceeds is payable to the spouse or child of the deceased, or for their benefit.

In certain circumstances insurance proceeds are taxable when payable to a corporation controlled by the deceased, but in this event the stock of the corporation is valued without taking the insurance into account.

Editorial Note:—A wife may now take out a life insurance policy on the life of her husband, paying the premiums from money given to her by him and the proceeds will *not* form part of his estate at his death. (The Gift Tax provisions of the Income Tax Act still prevail however).

Persons domiciled outside Canada

TAX PAYABLE

The new Canada Estate Tax Act provides for tax at the rate of 15% on property situated in Canada belonging to persons domiciled outside Canada at the time of death, with a basic exemption of \$5,000. In determining the value of the property for the purpose of this tax, no deduction may be made for debts other than those specifically chargeable to the property.

THE NOTCH PROVISION

The effect of the notch provision in Estates of persons domiciled outside Canada is that the tax liability cannot reduce the value of the Estate to less than \$5,000.

PROVINCIAL TAX CREDIT

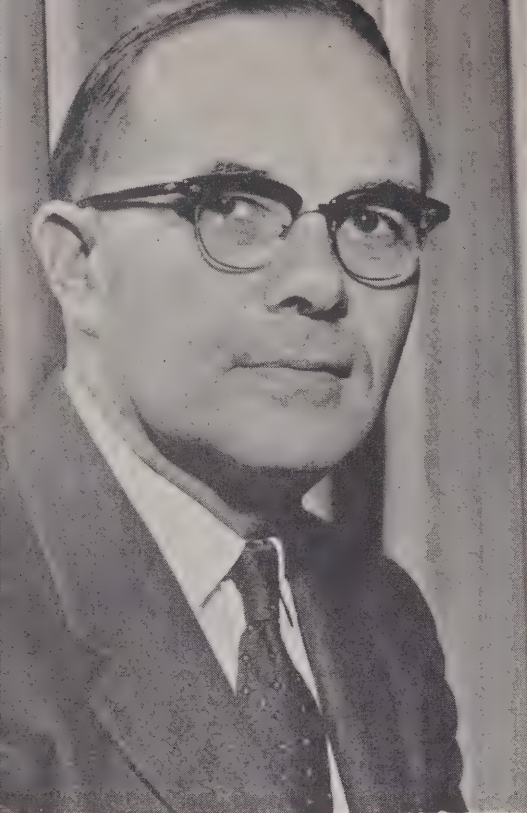
A credit is allowed in Estates of persons domiciled outside Canada in respect of duty paid to a Canadian province. The credit comes to one-half the federal tax applicable to the taxable property, provided the provincial duty has been paid.

SITUS OF PROPERTY

The Act sets out fairly extensive rules for determining the situs of property in Estates of persons domiciled outside Canada. An important new rule is that bearer bonds issued by a Canadian corporation are deemed to be situated in Canada. Substantially, the rules are similar to those contained in the succession duty agreements between Canada and certain other countries.

There is no truer and more abiding happiness than the knowledge that one is free to go on doing, day after day, the best work one can do, in the kind one likes best, and that this work is absorbed by a steady market and thus supports one's own life. Perfect freedom is reserved for the man who lives by his own work and in that work does what he wants to do.

R. G. Collingswood.



DR. GEORGE M. DEWIS

President

The Canadian Dental Association

Dr. George M. Dewis Installed As Association President

Dr. A. J. Coughlan acting as Installing Officer presented Dr. Dewis to the Annual Meeting of the Association:

Our Annual Meeting has many purposes and highlights not the least of which is the installing of a new President for the coming year.

This is the pleasant task which has been assigned to me and it is a pleasant task for I have the honour to present to this organization a man whose services to his profession have been both long and generous, a man whose capabilities have been proven at practically all levels of organized Dentistry.

He brings with him to this exalted office a wealth of experience, sound administra-

tive ability and able leadership. He comes from the Province of Nova Scotia, a Province which has given to our Association men of talent and initiative and men who have been responsible in no small way for its growth and progress.

He is George Murray Dewis, of Halifax, Nova Scotia.

George was born in Boston of Canadian parents, and received his early education in Shubenacadie and Colchester Academy, Truro, N.S. He studied Dentistry at Dalhousie University and graduated in 1928.

Some few years later he was made President of the Halifax Dental Society.

In 1935 he was elected to the Provincial Dental Board of Nova Scotia and since 1941 has been Secretary-Registrar.

He was oral examiner for the D.D.C. and later held the same office with the National Dental Examining Board.

He has been a member of the teaching staff of the Faculty of Dentistry at Dalhousie University and is at present Professor of Prosthodontics in that same institution.

He has been a member of the Board of Governors of this association since 1951.

This is the fine record of your incoming President, and it bears out the statement which I made earlier that his services to his profession have been both long and generous.

And now, Dr. Dewis, I have the enviable honour of installing you President of the Canadian Dental Association—our Profession's highest award—and on behalf of our membership, offer you congratulations and best wishes for a most successful and fruitful year.

Dr. Dewis then responded as follows:

First of all, I would like to extend my sincere thanks to Dr. Al Coughlan for his presence here today in the capacity of Installing Officer.

Past Presidents are always selected to take part in this ceremony and since I come from Nova Scotia, I think it is fitting and proper that another Maritimer should

participate in this ceremony, before it is too late!

You may recall that in the Economic Report of the Gordon Commission it was suggested that some Maritimers may have to move away to other parts of Canada in order to earn an adequate living. I am thankful, indeed grateful, that neither Al nor myself has had to pack his bags up to the present time.

In accepting this distinguished office I do so with a sense of pride and also with humility. It is a great personal honour to me and at the same time, I fully realize that you are recognizing the Province of Nova Scotia which has taken its part in the organization and the development of the Canadian Dental Association.

Since becoming a member of the Board of Governors in 1950 I have come to know some of the finest and ablest men in the dental profession in this country. These men are giving of their time and their leadership for the development of this Association. To know that these men will be carrying on through the various committees and boards through the coming year will be a tower of strength to me.

Several of the Past Presidents have been most fortunate in having our Secretary, Don Gullett, at their side. If it is possible to make the load of a President any lighter, can you suggest any person who can make it lighter than he? I am glad to know that I can have Don at my side for guidance and help.

As has been said here before today, the C.D.A. has its beginning in this City of Montreal, fifty-six years ago, and the thought occurred to me if the founders could have come back to this meeting to-

day and seen the growth that has taken place, I am sure they would have felt that their efforts were well rewarded.

Right now I would like to congratulate all the committees who have been responsible for putting on this Convention. Your hospitality and courtesies have been all that one could even hope for.

In 1959 the C.D.A. will be meeting in Nova Scotia. The last meeting held there was in 1946 at the Pines Hotel. Holding meetings at summer resort hotels is not without its problems and difficulties. Nevertheless, all the reports we received respecting that meeting were very favorable. Next year we will be meeting in Halifax, June 21st to June 24th. The month of June is an ideal time to spend a holiday in this part of Canada and we feel that we have much to offer you. It will afford you an opportunity to combine the convention and a holiday.

To those of you who have visited us before we say, 'Come again', and to those of you who have never visited us, we say, 'Welcome'.

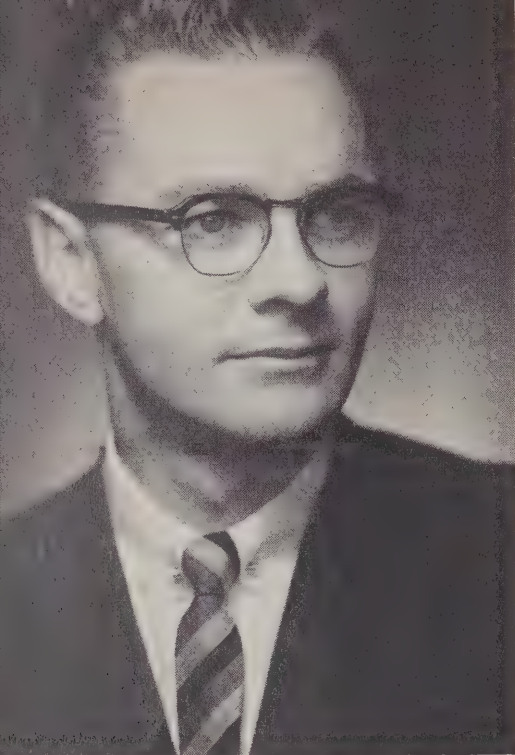
Just before I sit down I am going to ask my wife to stand up, that you may know her.

My term as your President will be much shorter than my predecessor. He has been in office sixteen months. I shall be there approximately eight. If we don't accomplish as much as you think we should, I hope you will be charitable enough to say we lacked sufficient time. I think that all any organization can ask of its President is that he give of his best. That I am prepared to do.

Once again, my sincere thanks for honouring me as you have.

All great ages have been ages of belief. I mean, when there was any extraordinary power of performance, when great national movements began, when arts appeared, when heroes existed, when poems were made, the human soul was in earnest.

Ralph Waldo Emerson.



photo—Ashley & Crippen.

DR. EDWARD R. BILKEY

Editor

Journal of the Canadian Dental Association

Dr. Edward R. Bilkey **Appointed Editor**

Commencing with the January 1959 issue of the *Journal of the Canadian Dental Association*, Dr. Edward R. Bilkey will be responsible for its content. The Committee on Publications being cognizant of Dr. Bilkey's

most significant contributions to dentistry, his appreciation of and facility with language and his genuine interest in his profession, is pleased to announce Dr. Bilkey's acceptance of the position of Editor of the *Journal*.

Dr. Bilkey was born in Toronto where he received his elementary and secondary school education. He entered the Faculty of Dentistry, University of Toronto in 1943 and was graduated in 1947. As an undergraduate he served as editor of the annual student publication, *Hya Yaka*, and also was the recipient upon graduation of the Academy of Dentistry prize attesting to his preeminence in dentistry for children.

His abilities in paedodontics were recognized and he was appointed demonstrator in the department almost immediately subsequent to graduation. He later became an Associate and remained on the Faculty staff a total of seven years. Dr. Bilkey was the first Vice-president of the Canadian Society of Dentistry for Children and two years later became the Society's president.

For several years, Dr. Bilkey served as a member of the Dental Public Health Committee of the Ontario Dental Association and has been a member of the Public Relations Committee of the Canadian Dental Association for the past two years. He has been an associate-editor of the *Journal of the Canadian Dental Association* for the province of Ontario for the past several years.

Currently, Dr. Bilkey is a member of the Council of the Academy of Dentistry, Toronto and chairman of its Mediations Committee.

He is married and the father of three children.

The care and nurture of Canadian dental journalism have been entrusted to an individual eminently qualified to accept such responsibility. The Canadian dental profession welcomes Dr. Bilkey to the post of Editor and extends to him sincerest best wishes for a long and successful editorship.

W.J.D.

There are five tests of the evidence of education—correctness and precision in the use of the mother tongue; refined and gentle manners, the result of fixed habits of thought and action; sound standards of appreciation of beauty and of worth, and a character based on those standards; power and habit of reflection; efficiency or the power to do.

EDITORIAL

The Board of Governors Meeting—1958

The deliberations of another annual Board of Governors meeting have become part of the records of the Canadian Dental Association. The decisions made, the policies approved, and the actions taken will affect, either to a greater or lesser degree, dentists in all parts of our country.

From October 22nd to 25th, 1958 the members of the Board of Governors, the chairmen of committees, representatives from the Department of National Health and Welfare, National Defence, and Veterans' Affairs and other participating members met in the spacious surroundings of the Queen Elizabeth Hotel in Montreal. At this annual session the activities of the year were reviewed both in Reference Committee and at the Board Meeting itself and from these studies courses of action were planned for the future.

One could not begin here to enumerate the many recommendations contained in the various reports submitted to the Board. Nor could one adequately discuss the ramifications of the many decisions of the Board itself. Shortly, the Transactions will be available and should be read by every dentist in Canada in order to view the most significant developments pertinent to dentistry taking place in our country.

Arising from four reports came strong recommendations to increase the administrative staff at association headquarters as soon as financially possible. Two areas of activity are particularly vital and require personnel possessing the appropriate training and experience.

Legislation pertinent to health services

is becoming more and more co-related and there are several areas having relationship to dentistry which should be studied. The problem of legislation has become so highly involved and complex that the employment of a person whose professional training would permit him to give positive guidance in this area of concern is essential.

Also a definite need exists for the development of statistical data related to dental practice in Canada. Adequate studies of the economics of dental practice in Canada and the subsequent interpretation and presentation of the findings predicate a need to retain a competent individual in this field.

It is interesting to note that governmental intrusion in dental practice in some countries in Europe has necessitated the employment of individuals with the above capacities. Their regret, however, is that these persons were not retained until ten years too late.

Obviously such individuals would and should command appropriate salaries. Extra clerical staff and added physical facilities would be necessary as well. The present budget of the Association does not permit further expenditures. It is necessary, then, if these proposals are to materialize, that added revenue be received. One is never popular when he recommends increased fees but it seems only common sense for dental practitioners, who have many thousands of dollars invested in themselves by the time they are prepared to attend their first patients, to have a strong organization to represent the pro-

fession on a national level. These proposals should receive the concerned and diligent attention of the various provincial corporate members.

The following are a few of the matters considered by the Board:

- learned that its secretary, Dr. Don W. Gullett, was appointed to the Council of F.D.I.
- recommended that the association accentuate its relationship with F.D.I. and W.H.O.
- recognized the accomplishment in establishing a new D.V.A. Schedule of Fees but indicated that a further revision is still required.
- approved a policy statement on Auxiliary Services.
- opposed action of Federal Civil Service Commission in establishing a class of dental practitioners who have not met the requirements of licensure in any province.
- negated all official actions of the association previous to calendar year 1950.
- agreed that the Directory should be revised and published annually.
- studied the annual report of the C.D.A. Pension-Assurance and Blue Cross plans and noted the progress.

—endorsed Canadian Conference on Children.

—asked that the status, policies, and relationships of the specialty sections to the C.D.A. be reviewed.

—gave official recognition to the specialty of periodontics.

—recommended an annual conference of provincial secretaries.

—adopted a resolution favouring federal incorporation of a dental services board.

—urged provincial corporate members to recommend to their respective legislatures that a clause be incorporated in the legislation pertinent to public hospitals that dental patients may be admitted to and attended by qualified dentists under the National Hospital Insurance Plan.

—reiterated its endorsement of fluoridation.

—endorsed certain recommendations emanating from the Council on Dental Education respecting the teaching of Practice Management and the teaching of Anaesthesia.

—authorized the Dental Public Health Committee to conduct a meeting this year at Association headquarters.

—elected Dr. George M. Dewis of Halifax, Nova Scotia as the Association president and Dr. Wesley J. Langmaid of Oshawa, Ontario as President-elect.

“30”

In the earlier days of service of one of the telegraph companies, there were thirty rules for the guidance of operators. The last rule required that the operator report the condition of the line at closing time and if everything were satisfactory simply say “Good night”. One night, an operator, perhaps being either tired, in a hurry, or somewhat weary of routine, sent from his office “See rule 30.” This was interpreted that all was well and thus the habit arose among the operators to tick out “30” to signify that the rule had not been forgotten but that all was well. We may, therefore, accept the explanation that “30” means “good night; all’s well.”

“All’s well” because a capable and conscientious member of our profession has accepted, commencing with the next issue,

the editorship of the Journal. It is “good night” because the present incumbent relinquishes the position after some five and one half years of tenure.

The Committee on Publications of the Canadian Dental Association is to be congratulated for re-establishing the post of editor on a basis which will permit the one who occupies it greater time to perform his essential editorial responsibilities.

The production of the editorial content of the Journal of the Canadian Dental Association has long since shed its hobby characteristic. It has been a source of great consternation to the editor for many months that the most limited time at his disposal did not permit the development of a Journal in keeping with the attained professional status of Canadian dentistry.

The task alone of attempting to maintain contact with the many and varied facets of our national program in order to convey, we hope, intelligently, these developments to the membership is formidable. Poorly edited articles and abstracts of limited value have, at times, been permitted to consume our pages. Content balance has been impossible because of a continuing dearth of contributions—a condition which probably can be charged to the editor's inability to maintain a vigorous and coercive follow-up program for articles. These and many other difficulties have caused us no little concern.

We hope that, in the future, each Canadian dentist will realize the Journal will serve its purpose only as each assumes some responsibility in its production. The development of the professional literature in this country is not the responsibility of the editor alone but is a professional obligation of each practitioner. Scientific or general interest submissions do not just happen. They are presented because concerned and conscientious individuals write them. They represent an expenditure of time and energy and are offered, without cost, to any person sufficiently interested to read them.

Editors, too, appreciate receiving communications from readers. It is not at all expected that such comments should be laudatory. It is only through the receipt

of pertinent and constructive observations that the editor can assess the worth of his periodical. Editors must function as the unofficial spokesmen for their profession and as the obstetricians of its literature. A greater interest on the part of the reader would assist materially in the discharge of these important responsibilities. We beseech your participating support for the new editor of this journal.

We should like to grasp this final opportunity to convey our deepest appreciation to the Canadian Dental Association for permitting us the great privilege of editing the English section of its Journal. Through the many and varied activities which surround the editorship we have been privileged to meet and share views with the leaders of our profession both here in Canada and elsewhere. Our direct association with editorial confreres within the American Association of Dental Editors, has been, for us, a most rewarding experience. We shall be eternally grateful to this Association for having had the opportunity of serving our profession in the post of Editor of the Journal of the Canadian Dental Association.

To our successor, Dr. Edward R. Bilkey, a man of unquestioned ability, we wish the same rewarding experiences in office that have been ours to enjoy.

"30"

Wesley J. Dunn.

CHRISTMAS 1958

"Why does everything seem so beautifully different at Christmas time? Even among the jostling throngs on the city streets, a soft and kindly spirit is evident. The harshness and selfishness of every-day living is softened and modified by a pervasive spirit of good will."

May this "spirit of good will", to which Norman Vincent Peale refers, fill your hearts at this Christmas Season.

All responsible for the production of this Journal join with its editor in wishing each and every one of you a joyful Christmas and a happy and peaceful 1959.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

Additions

CROXTON, F. E., & COWDEN, D. J.: Practical business statistics. Englewood Cliffs, N.J., 1958. 2nd ed. 1958. 550 p. illus. \$8.65.

FINN, S. B.: Treatment of fractured teeth in children. (Practical dental monographs, July 1958.) Chicago Year Book Publishers, 1958. 38 p.

IVANCIE, G. P.: Vincent's infection (necrotizing ulcerative gingivitis). (Practical dental monographs, March 1958.) Chicago, Year Book Publishers, 1958. 28 p.

MASSLER, M.; Pulp protection and preservation. (Practical dental monographs, January 1958.) Chicago, Year Book Publishers, 1958. 47 p.

MASSLER, M., & SCHOUR, I.: Atlas of the mouth in health and disease. 2nd ed. University of Illinois, 1958. 67 plates, 67 p.

MOYERS, R. E.: Handbook of orthodontics

for the student and general practitioner. Chicago, Year Book Publishers, Inc. 1958. 498 p. illus. \$11.00.

OKADA, M.: Essentials of stress breaker type partial denture prosthesis. Keio Gijiku University, Tokyo, 1958. 603 p. illus.

SOCIEDAD ESPANOLA DE ORTOLONCIA (S.E.D.O.): Actas de la Segunda reunion anual en Madrid, 14-20 de Mayo de 1956. 262 p. illus.

STAFNE, E. C.: Oral roentgenographic diagnosis. Philadelphia, Saunders, 1958. 303 p. illus. \$14.50.

STRANG, R. H. W., & THOMPSON, W. M.: Textbook of orthodontia. 4th ed. Philadelphia, Lea & Febiger, 1958. 880 p. illus. \$10.00.

TENNESSEE STATE DENTAL ASSOCIATION: History of the Tennessee State Dental Association. Compiled by Thomas Davidson Dow, written by Madison Jones. Nashville, 1958. 300 p. illus. \$8.00.

BOOK REVIEWS

Motivating Patients for More Effective Dental Service, by J. Lewis Blass, PH.G.; D.D.S.; F.A.C.D.; F.A.D.M.; Professor of Periodontia and Oral Medicine, Lecturer in Practice Management, New York University College of Dentistry. Contributions by Ben B. Drov, D.D.S.; Alice Gustav, A.B., A.M., PH.D.; and William Wolf, B.S., M.D., PH.D., 176 pages published by J. B. Lippincott Company, Philadelphia and Montreal. Price \$6.50.

This book is the outgrowth from a workshop on practice management. It is excellent. It is easy to read and it is a very timely study of the needs of

dentists in relation to their practices.

The author portrays the thinking processes of dentists as they approach a prospective patient and then in a nice way makes an evaluation. He points out that aside from technical know-how perhaps the most important and useful factor in dental practice is for the dentist to understand his patients as well as himself.

This implies that the dentist feels sufficiently secure in himself yet humble enough to consider all points of view. It implies that he be sufficiently mature emotionally and in judgment to respect the patients' desires and real needs in contrast to

considering him as a being who comes to the office with defective teeth and a well filled purse.

The writer points out the great importance of discovering the patient's true concept of dental care, past dental experiences and the service they really want and need—in a word, understanding the patient. This attitude of trying to understand and co-operate is often more effective than many words. Education of the patients begins with an understanding of their dental problem and respect for the doctor-teacher which results in confidence. There is a splendid "Atlas for patient education" included in the book.

The discussion of the dental assistant's qualifications and the responsibilities that may be assigned to her are at least thought provoking. The chapter on "Conclusions and Gains from the Workshop" is worth the purchase price alone.

I commend the book for its thoughtful professional approach. It is informative and useful reading for any dentist.

T. R. Marshall

"A Manual of Orthodontics". Prepared by:
Hallam Gresham, D.D.S. (N.Z.).

Published by: N. M. Peryer Ltd., Christchurch, N.Z. Pages: 200 + 127 illustrations. Price \$8.00 approx.

Here is a valuable book for all dentists interested in orthodontics. Although expressly written as a handy reference book for New Zealand undergraduate students and general practitioners, it gives a refreshing outsider's view of much controversial material appearing in current American orthodontic publications. The actual treatments outlined are confined to removable appliance methods, but the general remarks on growth, aetiology, diagnosis, etc. form a very readable summary of modern orthodontic thought. My only criticism of the text is the failure to stress the limitations of the treatment methods outlined. In a country such as Canada, with its thinly spread population, the general practitioner should be doing a great deal more interceptive and preventive orthodontics, but to obtain confidence in performing such procedures, the dentist should be fully aware of the limitations of the methods he employs. Overlooking this one shortcoming, I would recommend this book to all Canadian dentists who see children in their offices.

R. Cline

THE ASSOCIATION

Highlights of Annual Meeting

—The Convention at Montreal set a new attendance record—1,926 people registered.

—Dr. George M. Dewis of Halifax was installed as President of the C.D.A. for 1958-59 and will preside at the next meeting at Halifax in June, 1959.

—Dr. Wesley J. Langmaid of Oshawa, Ontario, became President-elect.

—Honorary membership was conferred on Dr. G. Guelph Armitage of Montreal.

—Portraits were presented to Dr. Ernest Charron, retired dean of dentistry at the

University of Montreal, and to retiring Director General of Dental Services, R.C. D.C., Brigadier Elgin M. Wansbrough. The painting of Dr. Charron will be hung at the university, and that of Brig. Wansbrough at the R.C.D.C. school at Camp Borden, Ontario.

—Dr. Wesley J. Dunn, retiring editor of the Journal, was presented with an engraved silver tray.

—A motion was approved directing the Executive to inform Corporate Members of the needs which will require increased expenditures of money in the future.

—A resolution was passed approving accentuation and continuation of C.D.A. relationships with international organizations.

—The Canadian Academy of Periodontology was accepted as a Section of the C.D.A., and recognition as specialists was granted to Periodontists.

—Approval was given to the recommendation that an annual conference of provincial secretaries be held at Headquarters.

—The Board agreed with the principle of obtaining a federal charter for a corporation to administer dental care plans, leaving matters of policy to the provinces.

—A resolution was adopted urging Corporate Members to seek permissive legislation to allow qualified dentists to admit and attend dental patients in a hospital under the National Hospital Insurance Plan.

—Approval was given a statement reiterating approval of fluoridation.

—A resolution was approved directing the Executive to study the possibility of obtaining additional administrative assistance, especially in the legal and economic fields.

Honorary Membership

To Dr. Guelph Armitage

President Racey, at the Annual Meeting of the Association presented Dr. Guelph Armitage for Honorary Membership:

Fortunately, all the duties which fall to the lot of the President do not entail the worries of responsibility, for spiced with these are activities which are most pleasant. A duty which gives me more than considerable pleasure at this time is to present to Dr. George Guelph Armitage, Honorary Life Membership in the Canadian Dental Association.

Dr. Armitage was born in Sherbrooke, Que., where he received his early education. While a dental student he indentured with Dr. G. E. Hyndman and Dr. F. H. Bradley in Sherbrooke and upon graduation from the University of Bishops Col-

lege in 1905 he obtained his licensure in Dental Surgery. Since that time he has practised in Montreal.

In 1926 Dr. Armitage was elected to the Board of Governors of the College of Dental Surgeons of the Province of Quebec and served as President of that body from 1934-36. From the time of his first election in 1926 he has served continuously being re-elected thirteen times. In 1936 he was delegated by the Board to represent them at the British Dental Association Convention in London, England.

For 27 years he held the appointment of attending Dental Surgeon to the Shriners' Hospital in Montreal.

In recognition of his services and devotion to the profession Dr. Armitage had the degree of Doctor of Dental Surgery (*honoris causa*) conferred upon him by McGill University in 1946.

He is a past president of the Montreal Dental Club and a past master of both the Ionic Lodge and the Royal Albert Lodge G.R.C. as well as a member of the Scottish Rite.

In civic affairs he has also shown considerable interest, being elected to the Council of the Town of Montreal West in 1933 where he served for eight years as Commissioner in charge of the Police and Fire Department.

Dr. Armitage it is my privilege as well as a great personal pleasure to present to you, the highest honour that the Canadian Dental Association can bestow: which is Honorary Life Membership.

Dr. Armitage then made response both in English and in French:

I was rather interested a little while ago to hear Bishop Whelan tell you there are three types of speakers. There is a fourth, and that is the one who has nothing to come before you with except his appreciation, which I can express without a piece of paper, for the honour you have done me today.

As I look back over the past I see others, many others, who have done more for the profession, as far as I am concerned, than I have done, but if I have devoted a little

extra time to doing something worthwhile, I have done it because I wanted to do it. I felt it was my duty, and if it was a little more than duty, I really appreciate the fact of your recognizing it.

I thank you so much for what you have done for me. I don't feel that I deserve it. At the same time if it comes my way I am quite sure others who have been associated with me will appreciate it just as much as I have.

Dental Health Newsletter

Volume 1 Number 1 of this new publication is dated Autumn 1958. Published by the Dental Health Division of the Department of National Health and Welfare, this effort should be welcomed by dental health personnel as a periodic review of dental health activities across the country.

Dr. H. K. Brown is dental consultant to the Division. Mrs. Helen Marsh is editor and Dr. H. R. McLaren is chairman of the editorial board. We congratulate them heartily on their first issue.

New Board Member

The Provincial Dental Board of Nova Scotia announces the appointment of Dr. P. S. Christie of Halifax, to the C.D.A. Board of Governors. This additional representative to the Board is necessary since Dr. George M. Dewis also of Halifax, has become President of the C.D.A.

One 'For', One 'Against' Fluoridation

A recent referendum in Prince Albert, Saskatchewan, favoured fluoridation by 3,214 votes to 2,952. Anti-fluoridation forces indicate that some action is planned and the "fluoridation issue is not over yet".

In Regina, voters turned down fluoridation by a vote of 12,484 to 11,869. Both plebescites were held in conjunction with municipal elections earlier this month.

Philadelphia Reports Decay Reduced 50%

A decrease of nearly 50 per cent in dental decay of permanent teeth among the city's school children and of 43 per cent in tooth extractions was reported by

James P. Dixon, M.D., Philadelphia Health Commissioner, on Sept. 22, the fourth anniversary of the fluoridation program in that city.

"Although public health authorities have held until now that it takes at least six years to get the full benefit of water fluoridation," Dr. Dixon said, "we decided to evaluate the process at the end of the fourth year and to announce our findings to the public. These findings are truly amazing."

The conclusions were based on a study of 17,617 six-year-old school children during the 1954-55 school year as compared to a study of 21,834 six-year-olds during 1957-58.

"While water fluoridation costs each person about 7.6 cents a year (a total of \$120,000 per year), at the present rate it will save a million dollars a year in reduced dental care for the people of Philadelphia," Dr. Dixon pointed out.

Dentists Outlive Others in U.S.

In 1957 the average age at death for dentists in the United States was 69.1, about two years more than the figure for the general white male population, according to a recent report of the American Dental Association.

A recent report concerning England and Wales shows that, among professional men, dentists have the highest death rate. In respect to death rates for all males regardless of occupation, death rates of professional men are not high, and the death rate for dentists is average. In comparison with the rates for other professions, the death rate for dentists is high, according to the British Dental Journal.

The American report was concerned with causes of death among dentists. Diseases of the circulatory system, including heart conditions, accounted for 56.1 per cent of the deaths among dentists in 1957. This figure was nearly four times as high as that for the second-ranking cause, neoplasms or cancer. The figures were based on reports from 36 state departments of health and covered about 67% of all dentists who died in 1957.

THE CORPS



Senior Officers present at the Mess Dinner honouring Brigadier Wansbrough. Left to Right: Brigadier K. M. Baird; Vice Admiral H. G. DeWolfe; Brigadier E. M. Wansbrough; Lt.-Gen. H. D. Graham; Air Marshal Hugh Campbell.

Brigadier Wansbrough Honoured

A mess dinner was held in the R.C.A.F. Officers Mess, Ottawa on October 31 to honour Brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., Q.H.D.S., D.D.S., F.I.C.D., F.A.C.D. on the occasion of his retirement as Director General of Dental Services.

In addition to many R.C.D.C. Officers and their wives, the distinguished guests present were:

Vice-Admiral H. G. DeWolfe, C.B.E., D.S.O., D.S.C., C.D., Chief of the Naval Staff and Mrs. DeWolfe; Lt.-Gen. H. D. Graham, C.B.E., D.S.O., E.D., C.D., former Chief of the General Staff and Mrs. Graham; Air Marshal Hugh Campbell, C.B.E., C.D., Chief of the Air Staff and Mrs. Campbell; Brigadier W. A. B. Anderson, O.B.E., C.D., Vice Adjutant General and Mrs. Anderson; Brigadier

K. A. Hunter, O.B.E., C.D., Director General Joint Medical Services and Mrs. Hunter; Surgeon Commodore T. B. McLean, C.D., Medical Director General/RCN and Mrs. McLean; Brigadier P. Tremblay, O.B.E., C.D., Director General of Medical Services and Mrs. Tremblay; Air Commodore A.A.G. Corbett, E.D., C.D., Director General Medical Services (Air) and Mrs. Corbett.

As principal speaker of the evening Lt.-Gen. Howard D. Graham was introduced by Brigadier K. M. Baird. General Graham traced Brigadier Wansbrough's long career of service in the Army from a young machine gunner in the Canadian Machine Gun Corps in World War I to his present appointment as Director General of Dental Services.

A portrait of Brigadier Wansbrough, painted by Mrs. Pamela Edwards of St. Adele, Que., was presented to Brigadier and Mrs.



Col. G. B. Shillington (left) presenting portrait to Brigadier and Mrs. Wansbrough.

Wansbrough by Colonel G. B. Shillington on behalf of the officers and men of the R.C.D.C. (R) and Colonel H. R. McLaren presented a bouquet of red roses to Mrs. Wansbrough and a projector and screen to Brigadier Wansbrough from the R.C.D.C.(M).

Brigadier Wansbrough eloquently thanked all concerned for the gifts and kind words said about him and paid tribute to his charming wife. He expressed the desire that all ranks of the R.C.D.C. give the same loyal support to his successor, Brigadier K. M. Baird, that was accorded to him during his service as Director General of Dental Services.

During the evening many telegrams, containing good wishes for Brigadier and Mrs. Wansbrough from individuals and R.C.D.C. units, were read. These messages reflected the feelings of all present, and indeed of all members of the R.C.D.C., that they enjoy health and happiness in their retirement.

Promotions Announced

Army Headquarters has announced the promotion of Lt.-Col. A. C. Leman, C.D. to

the rank of Colonel effective November 1st.

Colonel Leman was born in Toronto on August 9, 1912. He received his D.D.S. from the University of Toronto in 1938. He enrolled in the C.D.C. in May 1940 and served overseas during the war in France, Belgium, Holland and the United Kingdom. In March 1946 he transferred to reserve status and entered private practice in Toronto. He re-enlisted in the Corps with the rank of Major in July 1947 and served in Western and Central Commands. In June 1953 he was promoted to Lt.-Col. and held appointments as a senior Operator at Camp Borden and D.D. D.S. at the Directorate of Dental Services in Ottawa until July 1955 when he was posted to France as Commanding Officer of 35 Field Dental Unit. He returned to Canada in July of this year and is at present employed at the Dental Clinic, Air Force Headquarters in Ottawa. Colonel Leman is married with one child.

The promotions of Major N. A. Butcher, C.D. and Major J. G. Butler, C.D. to Lieutenant Colonel have also been announced. These promotions are both effective November 1, 1958.

Lt.-Col. Butcher is a native of Melancthon, Ontario and received his dental education at the University of Toronto, graduating with a D.D.S. degree in 1943. He enrolled in the C.D.C. in August 1943 and served in various clinics in Central and Western Commands until posted to Germany with 27 Dental Unit in November 1952. On his return to Canada in November 1953 he was employed in Central Command until September 1957 when he assumed his present appointment on the staff of the Directorate of Dental Services in Ottawa. Lt.-Col. Butcher is married with three children.

Lt.-Col. Butler was born in Princeton, B.C. on September 21, 1921. He attended the University of Toronto and graduated in 1944. He enlisted in the C.D.C. in May 1943 and served in Canada during the war. He was employed in Western Command from 1947 until January 1951 when he was posted to the United Kingdom for two years. After his return to Canada he was again posted to Western Command and proceeded to the Far East in August 1955. In August 1956 he was posted to Central Command and in November of this year Lt.-Col. Butler was appointed as A.D. D.S. at the Directorate of Dental Services in Ottawa.

Army Headquarters has also announced the promotion of three R.C.D.C. Captains to the rank of Major.

Captain M. P. Quinn—effective July 1, 1958; Captain I. W. Susser—effective August 17, 1958; Captain J. V. P. Chatwin—effective October 1, 1958.

Major Quinn was born in Prince George, B.C. on August 24, 1918. He received his dental education from the University of Alberta, graduating in 1953. He enlisted in the R.C. A.F. in 1941 and served as a pilot in Canada and Overseas, retiring with the rank of Flying Officer in 1946. On graduation in 1953 he joined the R.C.D.C. as a Captain and has served in Western Command at Victoria, B.C. and Whitehorse, Y.T. He was posted to his present location in Vancouver, B.C. in July of this year. Major Quinn is married with four children.

Major Susser, a native of Montreal, was born December 10, 1926. He received a B.Sc. from McGill and graduated from the same University with a D.D.S. in 1952. He enrolled in the Canadian Army in 1951 as a second lieutenant and was subsidized in his final year dentistry by the Department of National Defence. On graduation he was promoted to Captain and served in Prairie Command until his release in July 1955. He enrolled again in the Corps in May 1957 and was posted to Prairie Command. He is at present employed at R.C.A.F. Station, Portage la Prairie, Man. Major Susser is married with one child.

Major Chatwin was born in Regina, Sask. on October 1, 1921. He graduated in dentistry from the University of Alberta in 1947. He enlisted in the Army in 1939 and after two years at Royal Military College was commissioned in the Armoured Corps and posted to the Lord Strathcona Horse. He served in Canada and overseas with that Regiment and was released in 1946 with the rank of Major. His final year at University was subsidized by the Department of National Defence and after graduation was promoted to Captain and served in Central Command until his release in June, 1954. He re-enrolled in the Corps in June 1957 and was posted to his present appointment at Kingston Military Hospital. Major Chatwin is married with three children.

Captain McCurry Now in Corps

Dr. F. J. McCurry of Campbellford, Ont. enrolled in the R.C.D.C. as a Captain on October 14, 1958. Captain McCurry graduated from the University of Toronto in 1953 and practised in Campbellford, Ont.

C.D.A. Convention

Brigadier E. M. Wansbrough and Colonel K. M. Baird attended the C.D.A. Convention in Montreal in October.

Colonel Shillington at A.D.A. Meeting

Colonel G. B. Shillington attended the American Dental Association Convention in Dallas, Texas held November 10-13 and the meeting of the American Denture Society in the same city on November 7 and 8. Colonel Shillington is a member of the latter Society.

Officers Present Clinics

The following officers have recently presented clinics at dental meetings:

Lt.-Col. G. C. Evans—Sudbury District Society; Major A. R. Ramsay—C.D.A. Convention; Major E. D. Fraser—C.D.A. Convention.

Retirements

The following short service officers have been released from the Corps on completion of their tour of duty:

Captain K. N. Munro; Captain C. R. Pugh.

R.C.D.C. Association Holds Annual Meeting

The R.C.D.C. Association holding its annual meeting in conjunction with the C.D.A. Annual Convention, directed a great proportion of its deliberations to a consideration of the role of reserve dental officers in the event of a national disaster.

Delegates representing R.C.D.C. militia

units from Halifax to Vancouver adopted a resolution urging development of training of dental officers for this role.

Lt.-Col. J. L. Warriner of Winnipeg was elected president of the Association. Other officers elected were: Honorary Presidents—Brig. E. M. Wansbrough, Ottawa, and Col. J. P. Whyte, Swift Current, Sask.; Past president—Col. D. W. Henry, Montreal; president-elect, Lt.-Col. N. L. Simon, Hamilton; 1st vice-president, Lt.-Col. J. S. Goodfellow, Calgary; 2nd vice-president, Lt.-Col. C. E. Woods, Ottawa; secretary, Col. C. B. Climo, Ottawa; treasurer, Col. H. R. McLaren, Ottawa.

Dr. Don W. Gullett, C.D.A. Secretary, was

elected an honorary life member.

Dr. F. C. Pace, Medical Consultant, Special Weapons Section, Federal Civil Defence Health Services, gave the key-note address, and dealt with the problems of mass casualty care, and other emergency health services, in which the assistance of the dental profession would be required in time of national disaster.

Delegates, representing all R.C.D.C. (Militia) units in Canada, studied the responsibility of Militia Dental Officers in disaster health services, and have adopted a Resolution urging the development of a training programme in mass casualty care for their personnel.

THE PROVINCES

ALBERTA

1950 Class of Dentistry, University of Alberta Establishes a Self-Perpetuating Scholarship Fund.

At the regular monthly meeting of the Edmonton and District Dental Society at the Seven Seas the Dental Class of 1950 Award was given for the first time to Mr. Michael Wasylchuk of 11039-90th Ave., Edmonton, and High Prairie, Alberta. Mr. Wasylchuk is a third year student in the Faculty of dentistry, University of Alberta. The award is made to a student of outstanding ability who has finished his second year in Dentistry and is entering his third year. The award was for the amount of \$190.

The Dental Class of 1950 Award is rather unique in that provision is made for it to run in perpetuity so long as there is a need for it. As well, it has been solicited from only one graduating class. As such it represents their humble appreciation to the

Faculty which established them on their careers and which instilled in them a fine sense of professional responsibility to those that come later.

The class that established this fund was mostly war veterans and many of them were well aware of the financial needs that can confront a student. As usual one man is needed to congeal the thoughts of others and to stir others to action. The man in this case was Dr. Dalton Deedrick of Lacombe, Alberta.

In the fall of 1955 Dr. Deedrick sent a letter to each member of his class (fifty members) asking their opinion of the undertaking. The replies were so encouraging that a questionnaire was then dispatched outlining various possibilities for placing the award. A fund committee was established consisting of Dr. Deedrick, Dr. Bruce MacKenzie and Dr. R. C. McLelland. Each member was asked to contribute one hundred



**DEAN MacLEAN PRESENTS DENTAL CLASS
OF 1950 AWARD**

From Left to Right: Dean H. R. MacLean, Faculty of Dentistry, University of Alberta; Mr. Michael Wasylchuk; Dr. D. C. Deedrick, Lacombe, Alberta.

dollars. The amount collected represented contributions from 48 out of 50 members of the class.

Thus in 1958, three years later, the award is being made for the first time. This award will continue to be made in perpetuity or until such time as it is felt that it no longer serves a useful purpose. At such a time all monies then will revert to the President of the University of Alberta to be used to further the welfare of students as he and his advisors see fit.

The award in itself is possibly not the remarkable thing. The remarkable thing is that one small class of graduates has been able to do this. In establishing this award the class of 1950 in Dentistry at the University of Alberta has thrown a challenge in the face of every class that has graduated or will graduate from the University of Alberta. The challenge is for them to return to the University some tangible form of evidence of the gratitude they must feel for having had the opportunity of attending this fine institution and working with the dedicated members of her staff. If each class could put forth such an effort, regardless of faculty, many many problems and frustrations of our University would diminish. The challenge is out.

A.A.O.

Calgary and District Dental Society

The Calgary and District Dental Society held its first meeting of the fall in the Palisier Hotel on October 6th, 1958.

This was an open business meeting of the Society. Dr. J. C. Waddell and Dr. Roy L. Rasmussen gave a report on the Saskatchewan Post-Payment Dental Plan and discussed how this plan could be adapted to meet Calgary's needs.

Dr. L. K. Brooks, President of the Alberta Dental Association, was guest speaker and gave a report on the summer's activities of the Alberta Dental Association and outlined some of the problems facing the Association in the immediate future.

J.A.G.

Biennial Fall Refresher Course at Alberta

The sixth Biennial Fall Refresher Course of the Faculty of Dentistry, University of Alberta, was held in the Medical Building on September 4th and 5th, 1958.

The guest clinician for the course was Dr. John R. Thompson, Professor and Chairman of the Dept. of Orthodontics, Northwestern University Dental School. Another guest speaker was Dr. J. C. Muhler, Associate Professor of the Dept. of Chemistry and School of Dentistry, University of Indiana. We were also privileged to hear Dr. B. K. Rank from Melbourne, Australia. Dr. Rank is touring on a travelling fellowship. Dr. J. D. M. Alton, former resident in plastic surgery at the Glasgow Royal Infirmary was another guest speaker.

Table clinics were presented by the following members of the Faculty of Dentistry:

Drs. Castaldi, Tegart, Eastwood, Haryett, Mullen, Basaraba, and MacKenzie. The Periodical Study Group of Drs. Cameron, Stewart, Clarke, Lloyd, Jackson, and Gil-mour also presented a table clinic.

The course was very capably convened by the Fall Refresher Course Committee. Dr. D. G. MacGregor was chairman of this committee and Dr. K. A. McMurchy was secretary.

R.C.S.

BRITISH COLUMBIA

Interior Dental Society

The Fall meeting of the Interior Dental Society was held in Kelowna, at the Kelowna Aquatic on Saturday, October 25th. During the day dentists from Salmon Arm to Penticton listened to several interesting clinicians.

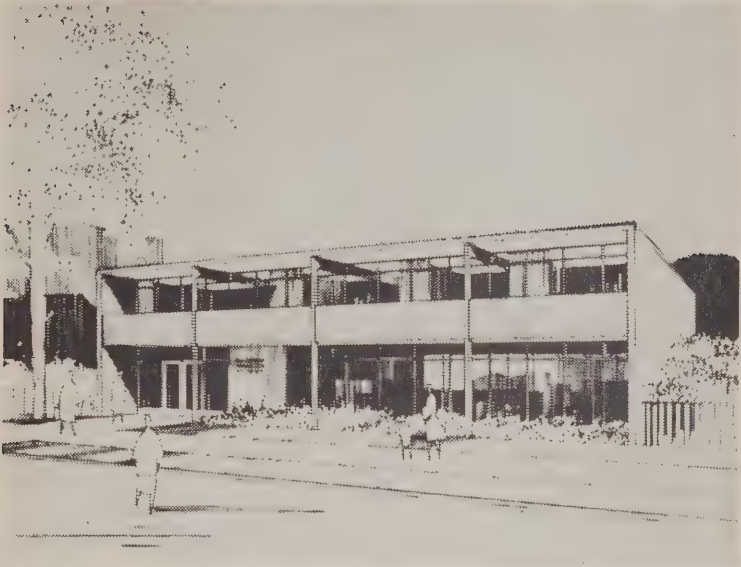
Dr. C. B. Holmes of Kelowna lectured on hypnosis, and Dr. O. F. Wright and Dr. B. M. Plumb, of Vancouver, lectured on other aspects of dentistry.

Dental assistants of the Valley held their regular fall meeting at the same time and listened in on the dental lectures.

Wives of the dentists were present to enjoy several social events planned for them.

The following executive for 1959 was elected: Dr. W. McIver, Penticton, president; Dr. Don Hicks, Kamloops, vice-president. Dr. Ken Geis, Kelowna, is the Interior representative to the B.C. Dental Association on health and welfare, and Dr. B. A. Bishop, Vernon, is the representative for public relations.

In attendance from Vernon were Dr. B. A. Bishop, Dr. Don Lemiski, Dr. H. Inkster, Dr. J. Phillips, and their wives.



Artist's conception of the proposed B.C. Academy of Dentistry which will be built in Vancouver's West End.

The B.C. Academy of Dentistry

Increased activities of the three large dental organizations in British Columbia have caused them to outgrow their present headquarters in the Medical Dental Building. Hence a two-storey building with masonry exterior and steel-frame interior will be constructed in two stages to house the offices of the B.C. College of Dental Surgeons, the B.C. Dental Association, and the Vancouver and District Dental Society.

The building will be erected on a piece of property in the 1500 block Robson Street, 66' by 131', acquired at a net cost of \$25,000 (and now valued at \$40,000), which is owned by the College and which will appreciate in value as the years go by. In the vicinity are some of the newest and most modern structures to appear in the city.

The ground floor will be rented to produce revenue, and for this purpose it was found necessary to form an incorporated society known as the Academy of Dentistry. Income from rentals and parking will be more than sufficient to pay bond interest, taxes, all maintenance costs, and to establish a bond retirement sinking fund.

The second floor will be used for dental purposes with large executive offices, study-club headquarters, dental library, lecture halls, and every facility for the advance-

ment of dentistry, including the engaging of outstanding clinicians for post-graduate courses.

Other groups in B.C. have discovered the advantages of spacious and modern buildings which serve not only as nerve centres of professional associations, but also provide a means of constantly improving standards through libraries, lecture halls and facilities for study.

Following direction given at the annual meeting of the College (in May), the dentists of B.C. are being asked to purchase 6% bonds in denominations of \$100, \$500 and \$1,000. A brochure has been sent out describing every detail of the project.

The first stage will cost approximately \$85,000. The second section of the building, costing about \$95,000, will eventually be joined to the original structure by hallways and stairs with an open courtyard area between. This will make available outside light to all tenants and will be an invaluable rental asset. The basement will be used for building services and parking.

Heading the building co-ordinating committee is Dr. Irving Snider, with Drs. Robert Scharff and Charles Craig as members. Directors of the Academy of Dentistry who will erect, own and manage it are the Council of the College of Dental Surgeons of B.C.

D.H.M.

Vancouver and District Dental Society

At the November meeting with some 200 in attendance, the society stood in silence in tribute to Dr. Frank Kenny who passed away recently.

Dr. Max Nacht presided, and after the preliminary business was over, Dr. Wm. Scott presented the guest clinician, Dr. Bert-ram H. Downs of Colorado, a distinguished prosthodontist. The lecture covered several interesting branches of restorative dentistry. The construction of a "bar bridge", which the speaker learned to make in Switzerland, was outlined in detail with slides, and also the fabrication of a bridge facing from a denture tooth.

Differing from many clinicians, Dr. Downs recounted a few of his own mistakes and failures, which made everyone feel at home. The case was reviewed of a dentist-patient who had all his teeth removed at his own insistence. They were all non-vital due to tubercular calcification, but clear of apical infection. The gums continued to be inflamed, and a total of five sets of dentures were made, none of which the patient could wear. Eventually a biopsy of the gum tissue was made and it was discovered that the patient was suffering from scurvy. A regular daily dosage of ascorbic acid restored his health and enabled him to wear all five sets of dentures. Dr. Downs stated that he now puts all his immediate denture cases on ascorbic acid.

In concluding, the lecturer expressed thanks for the hospitality shown to him and his wife, and the meeting adjourned after Dr. Ed. Martin voiced the society's appreciation.

B.C. Cabinet Appoints Board to Regulate Technicians

A board of examiners to regulate dental technicians in B.C. was set up recently by the provincial cabinet.

Chairman of the board is Dr. Gordon Shrum, dean of graduate studies, University of British Columbia.

Members of the board are R. R. Keith, Vancouver lawyer; Gerry Smith, a technician Wilf Elder, president of Dental Laboratories Association of B.C.; Dr. H. M. Cline, past president of B.C. College of Dental Surgeons.

The duty of the board is to make regulations, subject to cabinet approval, establish standards of education, experience and technical qualifications of technicians.

Emergency Treatment

In the Lower Mainland a 24-hour emergency service established over a year ago for

patients unable to obtain the services of their own dentists, has proved to be a successful venture. A patient who phones the "Emergency Dental Treatment" number is directed by the nurse in charge to one of the volunteer dentists in his own district.

To illustrate the use that has been made of the service, we quote figures for the month of September which show that there were 104 calls: 27 on Saturdays, 18 on Sundays, 6 on a holiday. During office hours there were 54 calls, and from five o'clock to midnight there were 46. Also during the month 3 travellers and visitors received necessary treatment. Dr. Wm. Doe has been in charge of the Vancouver branch of the service.

NOVA SCOTIA

Nova Scotia Dental Association

The Annual Meeting of the Nova Scotia Dental Association was held at Halifax on September 25th and 26th, in conjunction with the official opening of the new Faculty of Dentistry Building of Dalhousie University.

Dr. John Barr of Tuft's Dental College, Boston, was the special speaker. His subjects included the reduction of x-ray radiation and some of the finer points of radiographic interpretation.

The following slate of officers and committees was elected for the coming year:—President, Dr. A. Ervin; Senior Vice-President, Dr. W. H. McNeil; Junior Vice-President, Dr. T. L. Rogers; Secretary, Dr. A. B. Haverstock. Executive Committee: Drs. A. H. Ervin, W. H. McNeil, T. L. Rogers, H. P. MacCormack, and A. B. Haverstock; C.D.A. Delegate: Dr. P. S. Christie, and Alternate Delegate, Dr. Moses Claener. Provincial Dental Board: Dr. L. G. Israel, Dr. D. C. Eaton, and Dr. R. H. Taylor. Dental Public Health Committee: Drs. G. C. McLeod, A. B. Anthony, A. H. Wilson, Ken Kerr, Hardy Park, Carl Dexter, and G. V. Turnbull. Auditors: Drs. R. F. Cameron and F. C. Fennell.

H.M.E.

ONTARIO

Toronto Academy Holds Annual Dinner

The Annual Dinner of the Academy of Dentistry Toronto was held on Thursday,

October 23rd in the Concert Hall of the Royal York Hotel.

Three hundred and twenty-five guests, the largest attendance ever, sat down to dinner at this opening function of the Academy program. A highlight of the agenda was the presentation of a certificate, naming Dr. Thomas Robert Marshall an Honorary Life Member of the Academy of Dentistry. Dr. Frank Martin in making this presentation on behalf of the Academy, to his life long friend, outlined the many outstanding contributions of service which "Tom" had made, not only to the Academy of Dentistry, but also to the broader field of the whole profession itself.

Those present were privileged to listen to a real treat, provided by the guest speaker, Mr. Donald M. Graham, Director of Education for the Village of Forest Hill Schools. His topic "Hard Schools in a Soft Society", left his audience with some basic facts to consider, as to the realities of our present position in the education of our young people today. One thought provoking statement made by the speaker was that in Russia today, the educational budget takes up four times as much of the national income as our present system does here in Canada.

W.A.W.



photo—Toronto Star.

TORONTO ACADEMY HONOURS DR. T. R. MARSHALL

Dr. T. R. Marshall is shown receiving an Honorary Life Membership in the Academy of Dentistry, Toronto. Dr. Marshall is flanked by Dr. Frank Martin (left) who made the presentation on behalf of the Academy and Dr. Marshall's son, Dr. Robert Marshall, Immediate Past President of the Academy.

versity of Toronto. His subject was Concepts of Operative Dentistry in Daily Practice. The speaker was introduced by Dr. P. E. Currie and thanked by Dr. Shankman.

A.V.S.

Brockville Dental Society

The regular Fall dinner-meeting of the Brockville Dental Society was held in October, at the Golden Oak and the executive for the coming year was elected as follows: past president, Dr. R. E. McBroom; president, Dr. F. J. F. Phillips; vice-president, Dr. C. O. McDougall; secretary-treasurer, Dr. A. W. Sheridan; chairman of Equipment for Clinicians, Dr. W. L. Durant; social chairman, Dr. C. D. Goodison.

London and District Dental Society

The London and District Dental Society held its first meeting of the 1958-59 season, Saturday, October 18th at the Hotel London. Sixty-six dentists from London and surrounding districts were in attendance.

Dr. W. H. E. Mason presided over the first half of the meeting and introduced Dr. D. E. Whiteman, the new President for the 1958-59 season. Dr. Whiteman conducted the rest of the meeting and introduced the remaining members of the new executive: Dr. D. C. Way, Vice-President, Dr. A. V. Scrutton, Secretary, and Dr. P. E. Currie, Treasurer.

Dr. J. Gajda and Dr. W. B. Hudgins were welcomed as new members of the Society.

The scientific part of the program was conducted by Dr. James D. Purves, Assistant Professor at the Faculty of Dentistry, Uni-

QUEBEC

Alpha Omega Fraternity

The annual dinner of the Montreal Alpha Omega Alumni chapter, was held on October 25th at the Queen Elizabeth Hotel. Dean James McCutcheon, McGill University, and Dr. John Sherman, President of the Alpha Omega Fraternity were invited as guest speakers.

Dr. McCutcheon was presented with an Alpha Omega plaque in recognition of his services in helping to form the undergraduate chapter of Alpha Pi in Montreal. Dr. McCutcheon spoke of the increasingly growing ties between Alpha Omega and McGill University. He maintained that the undergraduate chapter will bring all the students closer together, where they can be more relaxed and discuss different aspects of fraternity life. He also said that fraternal relationships of the young students as future dentists would always exist because of the present, folding of these young men in Alpha Fraternity.

Dr. John Sherman, international president of Alpha Omega Fraternity, spoke of his recent trip to Israel. Dr. Sherman said, "Travelling the length and breadth of this country, reliving the events of the Bible, viewing

at first hand, the evidences of many civilizations that have left their indelible mark on history, we were impressed beyond description by the overwhelming accomplishments of the State of Israel." Dr. Sherman spoke of his tour of the Hebrew University in Jerusalem and of his visit to the dental clinic established in the Hadassah Medical Centre in Jerusalem.

Speaking of Alpha Omega's financial contributions to dentistry in Israel, Dr. Sherman told the gathering that a cheque for \$200,000.00 was presented to the Hebrew University. This cheque represented the first installment on the Fraternity's pledge to help build the new School of Dentistry at the Hebrew University.

Both speakers were introduced by Dr. Robert Wiener and thanked by Dr. Morton Lang.

E.R.

SASKATCHEWAN

Prince Albert Votes in Favour Of Fluoridation

Anti-fluoridationists said recently "fluoridation is not over yet", though Prince Albertans have favoured adding fluorine to the city's water supply. The fluoridation referendum was passed by a slim 262 vote margin in the election held November 5th. Some 3,214 voted in favour and 2,952 against.

"We are definitely planning to take some action but cannot say what it will be as yet," said Rev. J. E. B. Cowan, anti-fluoridationist official.

Dr. Nick Fedirko, Prince Albert Dental Society president, said he was pleased with the vote.

"I don't think it will be too long before city council passes the by-law. They asked for a 'yes' vote and got it. The mechanism for the treatment of the water with fluorine is already here.

Regina Opposed

Residents voted against fluoridation of Regina's water supply in civic elections recently, 12,484 to 11,869.

Prince Albert Dentist Appointed to Board of Broadcast Governors

Hon. George Nowlan, Minister of National Revenue announced recently the personnel of the newly-formed Board of Broadcast Governors. Dr. Mabel G. Connell, a 1923 graduate of the Royal College of Dental Surgeons of Ontario, received an appointment to the Board. Dr. Connell is also Saskatchewan director of the Canadian Federation of University Women.

Saskatchewan Dental Convention

The Saskatchewan Dental Association Convention and Refresher Course in oral surgery, held in Regina on September 1, 2, 3, 1958, were unqualified successes. Dentists from all parts of Canada and the northern United States assembled in the Queen City to spend a very profitable and enjoyable three days.

Dr. J. Ludwig, maxillo-facial surgeon from Winnipeg, Manitoba, gave most informative clinics in oral surgery. Dr. John Neilson, Dean of the Faculty of Dentistry, University of Manitoba, in his address to the Association, traced the progress of dentistry in Canada, and in particular the development of the new faculty of dentistry at the University of Manitoba.

A resolution was submitted by the Saskatoon Dental Society that the Saskatchewan Dental Association be dissolved, and that all its monies and customary duties be assumed by the Saskatchewan College of Dental Surgeons. They shall henceforth be the sole representatives of our profession in this province. Because the Saskatchewan dental fraternity is small in number, it was felt that the administrative duties could best be carried out by one organization. The resolution was adopted.

This convention also went on record as recommending to the College of Dental Surgeons that every effort be made to co-operate with the C.D.A. and other associations of neighboring provinces who wish to adopt the Saskatchewan dental post payment plan within their own provinces.

Fluoridation of the community water supplies was also endorsed by the convention.

Congratulations were extended to the Saskatchewan Dental Nurses Association, on receiving their charter. About 30 members registered at the S.D.N.A. meeting, which was held in conjunction with the S.D.A. convention.

J.B.S.

IN MEMORIAM

Maurice Ross McNeill—Dr. Maurice Ross McNeill of Aylmer, Ontario, died on October 29th, following a heart attack.

He was born in Tiverton, Ontario and received his early education there, he graduated from the University of Toronto in 1934 and practised in St. Marys for three years before moving to Aylmer.

Dr. McNeill was a member of the London and District Dental Society. He was a charter member of the Kinsmen Club and a past president, in 1958 and at the time of his death he was on the sick and visiting committee of the Club. He was founder and vice-president of the Aylmer Curling Club. He was a member of the Col. Talbot Branch 81 of the Canadian Legion. Dr. McNeill enlisted in the C.D.C. in 1940 and served two years in Saint John, N.B. before going overseas.

Dr. McNeill was a member of the old Board of Education and upon the formation of East Elgin District High School Board, he served the first term in 1957, later serving on the Public School Board and was also a past chairman.

Surviving are his wife Marion, a daughter, Marilyn, his father Murdock McNeill, and two brothers, Alvin and Gordon.

Frank Patrick Kenny—Dr. Frank P. Kenny of New Westminster, B.C., aged 64, passed away in Royal Columbian Hospital on October 21st following a heart attack. He had been in poor health for some time and retired from practice a year ago.

Born in Lethbridge, Alberta, he served in the First World War and graduated from Toronto in 1923. After practising in Prince Rupert for three years he established his practice in the Royal City.

He was president last year of the New Westminster Salmonbellies Lacrosse Club, and in the year 1955 was president of the Canadian Lacrosse Association. The following year he became president of the Inter-City Lacrosse League Commission.

Dr. Kenny was elected president of the New Westminster Liberal Association in 1950 and as campaign manager for former Premier Byron (Boss) Johnson, he was a delegate to the Liberal National Advisory Council in Ottawa in 1950.

In the same year he was also elected president of the Westminster Club.

Dr. Kenny leaves his wife, a son, Robert, in Nanaimo, and three grandchildren, two brothers, Fred in Calgary and John Ernest in Victoria; and two sisters, Mrs. A. J. Mac-Millan, Calgary, and Mrs. Harry Nadin, Toronto.

Marshall George Vair—Dr. Marshall George Vair of Toronto, Ontario, died on October 21, 1958.

Dr. Vair graduated from the Royal College of Dental Surgeons in 1912, and set up practice in Toronto.

Surviving are his wife, Lina, a son, George C. and two grandchildren, Derek Ross, and Heather Ann. He was predeceased by his son Marshall Ross Vair (R.C.A.F.)

Frederick Charles Becker—Dr. Frederick Charles Becker of Toronto, died on November 4. He was in his 75th year.

He was born in Clifford, Ontario, and received his early education in Harriston, Ontario. Dr. Becker graduated from the Royal College of Dental Surgeons of Ontario in 1906 and established his practice in Toronto.

He was a past member of Wells Hill Lawn Bowling Club; an A.F. & A.M. Past Master, R.A.M. Past Principal of Knights Templar, Past Preceptor and Past Grand Registrar.

Surviving are his wife, Eva Lovella, a daughter, Grace, a brother, W. G. Becker and a sister, Mrs. J. E. Knechtel.

Andrew Frederick Colvin—Dr. Andrew Frederick Colvin of Ottawa, died on November 1st, 1958.

Dr. Colvin was born in Teeswater, Ontario and received his early education in Teeswater and Wingham. He graduated from the R.C.D.S. in 1918 and practised in Southampton from 1917 to 1918 and from 1919 to 1958 in Ottawa.

He was a member of the Ottawa Dental Society. Also a member of the Masonic Order and a former member of the Ottawa Lions Club.

Surviving is his wife Ellis, a brother, Arthur, and a sister, Mrs. T. Moffatt.

Loftus Tackaberry Kennedy—Dr. Loftus Tackaberry Kennedy of Toronto died on October 19th, 1958. He was 86.

Dr. Kennedy was born in Bolton, Ontario and received his early education in Toronto, he graduated from the R.C.D.S. in 1900 and practised from 1900 to 1901 in Havelock, 1901 to 1918 in Arthur, 1918 to 1938 in Toronto, and 1938 to 1954 in Bolton, he retired in 1954.

In 1950 Dr. Kennedy was made an Honorary Member of the Royal College of Dental Surgeons of Ontario.

He is survived by his wife, Ida Lois, a son, Victor L., a daughter, Gladys, and three grandchildren.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1959	Halifax, Nova Scotia	June 21st - 24th
1960	Ottawa, Ontario	Sept. 25th - 28th
1961	Saskatoon, Saskatchewan	June 25th - 28th
1962	Vancouver, British Columbia	June 3rd - 6th
1967	Toronto, Ontario (Centennial Celebration of Dentistry in Ontario)	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 23-27, 1959	15th Australian Dental Congress	Adelaide, South Australia	The Secretary,	15 Grenfell St., Adelaide, South Australia.
Mar. 29-31, 1959	Fifth National Dental Congress & I Congreso Interamericano Dental De Cuba	Havana, Cuba	Dr. Claudio F. Cornell,	Colegio Estomatologico Nacional calle L No. 353 Vedado, Havana, Cuba.
May 10,-	Ontario Dental Association Convention	Royal York Hotel, Toronto, Ont.	Mrs. A. Durham,	234 St. George St., Toronto 5, Ont.
May 28, 29, 30, 1959	British Columbia Dental Association Annual Convention	Hotel Vancouver, Vancouver, B.C.	Dr. W. Ross Upton, Exec. Sec.,	217 Medical Dental Bldg., Vancouver 1, B.C.
May 31-June 3, 1959	Western Canada Dental Society Convention	Banff Springs Hotel, Banff, Alberta.	Dr. C. S. Lea, Secretary,	708 Greyhound Bldg. Calgary, Alberta.
Sept. 13, 14, 15, 1959	Eastern Ontario Dental Association Convention	Chateau Laurier Hotel, Ottawa.	Dr. H. C. Bugden, Sec. Treas.,	183 Metcalfe St., Ottawa, Ont.

ACADEMY OF DENTISTRY TORONTO

Jan. 22, 1959—First Stated Meeting—Osler Hall
 Jan. 23, 1959—Special All Day Clinic—Seaway Hotel
 Feb. 12, 1959—Second Stated Meeting—Osler Hall
 Mar. 6, 1959—Academy Dinner Dance—Granite Club
 Mar. 26, 1959—Third Stated Meeting—Osler Hall

For further details write to: Dr. Vernon Herron, Secretary, Academy of Dentistry, 230 St. George St., Toronto 5, Ont.

UNIVERSITY OF TORONTO FACULTY OF DENTISTRY

Postgraduate course in **Orthodontics** (For the General Practitioner) March 9-13, 1959—Enrolment Limit 12—Tuition Fee \$100.00. The course will be under the general direction of Dr. D. G. Woodside, Faculty of Dentistry, 230 College St., Toronto 2B, Ont.

Courses leading to Specialist Certification—Applications will be received up to March 1, 1959 for enrolment for Specialist Certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics and Periodontics. Enrolment in each course is limited, and the courses extend over a period of two academic years (Surgery, three years).

For further information and application forms write to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

UNIVERSITY OF ALABAMA SCHOOL OF DENTISTRY

Refresher Courses: Feb. 14, 15, 1959—"Dental Assisting"

Feb. 21, 22, 23, 1959—"A Practical Approach to the Full Denture Problem"

Feb. 28, Mar. 1, 2, 1959—"Removable Orthodontic Appliance Construction". This course is limited to practicing orthodontists.

For further information please write to: Director, Refresher Course Program, University of Alabama School of Dentistry, 1919 Seventh Ave. South, Birmingham, Alabama.



DE L'ASSOCIATION DENTAIRE CANADIENNE

Diagnostic de la dentine opalescente et de la dentinogenesis imperfecta*

par Z. MEZL, D.D.S., M.D., Montréal

Les troubles de la dentinogenèse qui se manifestent surtout par une teinte foncée, par une opalescence ou translucidité spéciale et par une usure excessive des dents ont été décrits sous les noms de dysplasie de Capdepon, dentine opalescente héréditaire, dentinogenesis imperfecta, odontogenesis imperfecta. La maladie de Capdepon des auteurs français est considérée identique avec dentine opalescente héréditaire des auteurs américains. ^(6,8) Le terme odontogenesis imperfecta est trop général pour exprimer un diagnostic précis; il est remplacé par les termes amelogenesis imperfecta ou dentinogenesis imperfecta, d'après le caractère du cas.

Le nom dentinogenesis imperfecta peut exprimer tous les troubles de la dentinogenèse et il s'ensuit qu'il est employé tantôt d'une façon indéfinie, incluant la dentine opalescente héréditaire, les anomalies dentaires accompagnant l'osteogenesis imperfecta et des cas incertains; tantôt d'une façon plus précise, seulement pour les anomalies dentaires en relation avec l'osteogenesis imperfecta.

Il semble justifié de distinguer au moins deux entités cliniques et pathologiques pour lesquelles on peut préciser les noms dentine opalescente et dentinogenesis imperfecta.

La *dentine opalescente* présente les signes caractéristiques suivants:

1. Des anomalies dentaires bien généralisées sur toutes les dents ou au moins

*Travail préparé dans le département de pathologie dentaire de la Faculté de Chirurgie Dentaire de l'Université de Montréal.

sur des grands groupes de dents: a) teinte foncée, brun, brun-jaune, brun-gris, brun-bleu; b) translucidité ou opalescence spéciale; c) vulnérabilité menant à une usure rapide et excessive; d) diminution du volume des cavités pulpaire et des racines. La perturbation siège dans la dentine. La dentine contient moins de matières inorganiques, plus d'eau et de matières organiques que normalement, avec les conséquences qui en découlent: diminution de la dureté, de la densité et de l'absorption des rayons X.⁽¹²⁾

2. La structure microscopique de la dentine dans les cas classiques est tout à fait caractéristique: les canalicules dentinaires sont disposés par touffes (Fig. 1, 2, 3). Des canalicules très fins et nombreux près de la surface s'unissent progressivement en faisceaux larges et peu nombreux.



FIG. 1
Dentine opalescente, canalicules dentinaires disposés par touffes.
(Coupe par usure, obj. 2.5, ocul. 6.)

Cette structure est bien uniforme dans la dent entière. Cette dentine est pathologique, anormale, mais quoiqu'on la désigne souvent comme "irrégulière", elle n'est pas du tout comparable à la dentine irrégulière dans le sens habituel du mot. On décrit dans la bibliographie d'autres détails microscopiques qui semblent être moins importants pour le diagnostic différentiel.

3. L'anomalie est héréditaire, transmise comme un caractère dominant.

4. L'anomalie est purement dentaire, l'examen général ne montre aucun autre signe caractéristique.

La *dentinogenesis imperfecta* présente les signes caractéristiques suivants:

1. Des anomalies dentaires généralisées. Leur description clinique est à peu près la même que celle de la dentine opalescente. S'il existe une différence visible entre des

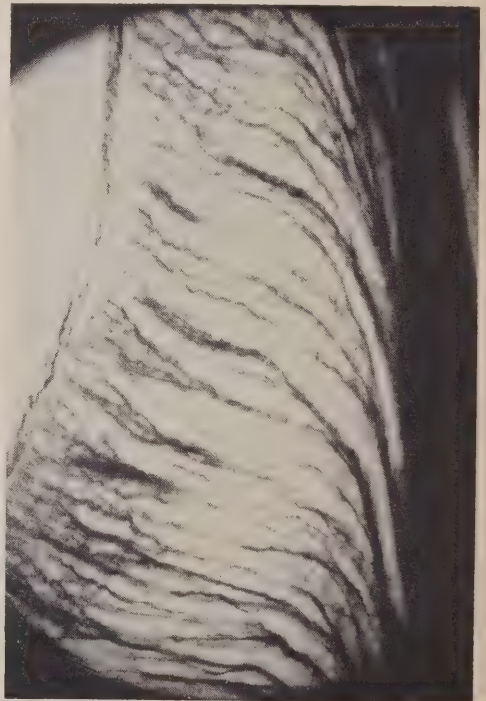


FIG. 2
Dentine opalescente, canalicules dentinaires disposés par touffes.
(Coupe par usure, obj 10, ocul. 6.)



FIG. 3

Dentine opalescente, canalicules dentinaires disposés par touffes.

(Coupe par usure, obj. 25, ocul. 6.)

cas classiques, généralement l'usure la fait disparaître. La perturbation siège dans la dentine. Celle-ci est moins minéralisée que normalement, avec toutes les conséquences évidentes de ce fait.⁽²⁵⁾

2. La structure de la dentine dans les cas classiques est caractéristique: la dentine présente une stratification très marquée (Fig. 4, 5). La couche superficielle est à peu près normale, les couches profondes sont irrégulières. Il y a des zones présentant des inclusions cellulaires et des inclusions pulpaire très nombreuses. Il y a des zones présentant un arrangement irrégulier des canalicules dentinaires avec un diamètre large et des ramifications très nombreuses. Il y a des zones avec peu ou presque pas de canalicules. La stratification n'est pas en corrélation avec la chronologie du développement de la dent. Le degré des irrégularités varie d'un cas à l'autre.

3. L'anomalie est tantôt héréditaire comme un caractère dominant, tantôt une mutation.

4. L'anomalie dentaire est trouvée dans un cas d'osteogenesis imperfecta.

L'osteogenesis imperfecta est une maladie se manifestant dans plusieurs tissus mésodermiques, consistant en trouble de la formation des substances fondamentales. Les tissus les plus développés, c'est-à-dire les os et les dents sont les plus frappés. On

distingue au moins deux formes qui sont considérées tantôt des variantes d'une seule maladie, différant seulement par leur évolution, tantôt des maladies distinctes. Dans le type de Vrolik, osteogenesis imperfecta foetalis, la maladie se manifeste déjà dans le fœtus et mène à la mort avant la fin de la grossesse ou bientôt après la naissance. La plupart des études dentaires microscopiques ont été faites sur les germes des dents de cas semblables. Dans le type de Lobstein, osteogenesis imperfecta tarda, osteopsathyrosis, la maladie se manifeste chez les enfants et diminue d'intensité à l'âge adulte. On cite 8 signes caractéristiques: 1) fragilité des os — fractures fréquentes, multiples, spontanées; 2) coloration bleue des sclérotiques; 3) surdité; 4) laxité des ligaments; 5) anomalies des dents; 6) anomalies de conformation et de structure des os; 7) anomalies de configuration du crâne; 8) réaction électrique anormale des muscles.

On trouve dans la bibliographie des descriptions des anomalies dentaires qui ne présentent pas tous les signes ni de la dentine opalescente ni de la dentinogenesis imperfecta. De nombreux cas de cette sorte observés dans la pratique ne sont jamais publiés parce qu'une étude détaillée ne peut pas être faite d'une façon satisfaisante ou ne donne pas de résultats comparables à un cas classique.

Dans la pratique, on constate relativement souvent des altérations dentaires généralisées, caractérisées par une usure bien au delà des limites habituelles sans cause apparente et par une teinte anormalement foncée, brune. La plus grande partie des couronnes et de l'émail sont disparues; l'interrogatoire, la radiographie, l'examen général ne permettent pas de formuler un diagnostic précis. Dans ces cas, on pourrait poser un diagnostic différentiel d'après une biopsie, si on examine microscopiquement une coupe mince par usure, préparée d'une dent extraite.

Dans les cas où il s'agit de l'amelogenesis imperfecta, des restes d'émail permettent de poser le diagnostic soit de l'hypoplasie brune héréditaire, soit de l'hypo-

calcification héréditaire.

La dentine avec des canalicules disposés en touffes montre qu'il s'agit de la dentine opalescente du type de Capdepont.

La stratification de la dentine, des inclusions, des irrégularités marquées indiquent que l'anomalie appartient au groupe de dentinogenesis imperfecta.

Si la structure des restes de l'émail et de la dentine est à peu près normale, on peut exclure les maladies mentionnées et il faut chercher une autre cause de l'usure et de la pigmentation.

Il semble justifié de baser le diagnostic de la dentine opalescente et de la dentinogenesis imperfecta sur l'aspect clinique et microscopique du processus pathologique, même si les données sur l'hérédité et l'état général ne sont pas convaincantes.

En tant que les travaux publiés soient

assez clairs pour permettre une conclusion, on n'a pas trouvé la dentine avec touffes dans un cas d'osteogenesis imperfecta. On peut considérer la structure avec touffes comme une entité spécifique.

On trouve la structure caractéristique de la dentinogenesis imperfecta tantôt dans les cas évidents de l'osteogenesis imperfecta, tantôt dans les cas présentant un trouble indéfini du système osseux, tantôt dans les cas ne présentant pas d'autres altérations. L'intensité des manifestations de l'osteogenesis imperfecta varie dans différentes périodes de la vie du malade. On pense que dans les cas de dentinogenesis imperfecta des variations dans l'évolution de la maladie se traduiraient par la gradation des anomalies de structure de la dentine.

Le degré des altérations de la structure

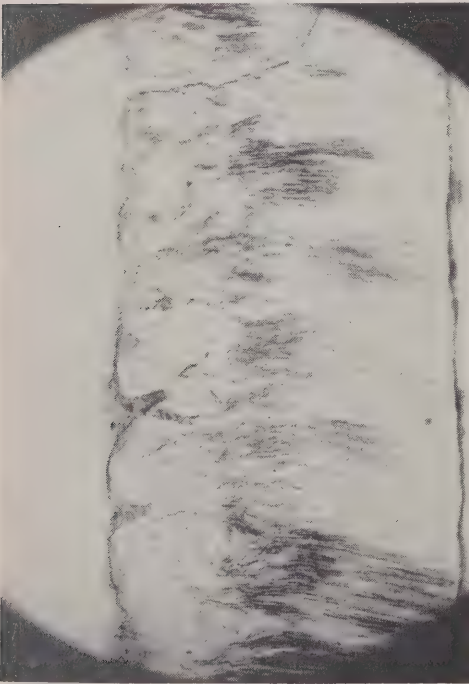


FIG. 4

Dentinogenesis imperfecta. Stratification de la dentine, inclusions pulpaire, irrégularités des canalicules.

(Coupe par usure, obj. 10, ocul. 6.)

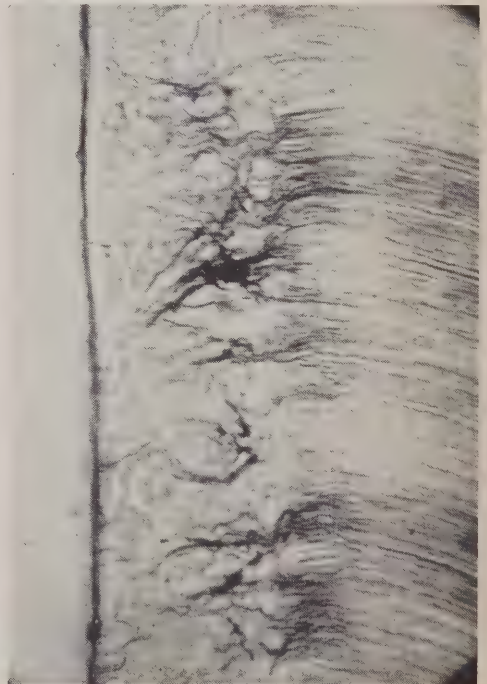


FIG. 5

Dentinogenesis imperfecta. Inclusions, irrégularités des canalicules.

(Coupe par usure, obj. 10, ocul. 10.)

de la dentine varie beaucoup. Tantôt presque la totalité de la dentine est gravement altérée, tantôt de larges portions de la dentine sont modérément altérées, tantôt il n'y a que des zones ressemblant aux irrégularités peu spécifiques (celles qu'on peut observer après l'expérimentation, dans les avitaminoses ou même dans quelques cas exceptionnels de pulpites chroniques). Quoique l'on ne trouve pas de corrélation avec la chronologie du développement de la dent, (comme dans des hypoplasies ordinaires), on trouve une corrélation avec l'âge des odontoblastes: les irrégularités commencent dans tous les canalicules à peu près à la même distance de la surface.

La dentine est un tissu spécialement développé qui est plus sensible aux différents troubles que l'os, et les conséquences d'un trouble pendant son développement restent permanentes. On pense que la dentinogenesis imperfecta sans d'autres symptômes pourrait être une forme de l'osteogenesis imperfecta qui est tellement légère que d'autres manifestations passent inaperçues. En effet, on a constaté dans un cas évident d'osteogenesis imperfecta que les dents avaient été frappées déjà à une période où il n'y avait encore aucun signe visible de l'osteogenesis imperfecta.¹⁹

L'examen microscopique permet de séparer et de distinguer des entités différentes citées plus haut. Une étude de cas nombreux classifiés de façon précise permettra des conclusions sur leur pathogénie. Pour le moment, on pourrait considérer deux pathogénies hypothétiques:

D'après la théorie sur le rôle de l'épithélium dans le développement dentaire, au stade organisant, l'épithélium du germe dentaire exerce une influence sur le tissu mésodermique adjacent qui prend ensuite le caractère spécifique de la pulpe dentaire susceptible de former la dentine. La dentine opalescente pourrait être une manifestation d'un trouble de la fonction organisante de l'épithélium de tous les germes dentaires ou d'un trouble de la lame dentaire. L'aspect microscopique peut corroborer cette hypothèse: une influence épithéliale pathologique produirait

une pulpe pathologique qui continuerait à former d'une façon uniforme une dentine pathologique.

La dentinogenesis imperfecta étant en relation avec l'osteogenesis imperfecta, elle est évidemment un trouble des tissus mésodermiques. L'épithélium déclencherait normalement la formation de la dentine, ce qui produit la couche superficielle à peu près normale. Le tissu mésodermique pathologique serait incapable de continuer la dentinogenèse normale dans les parties plus profondes. La structure de cette dentine pathologique rappelle une exagération des lésions qui sont produites parfois par des troubles concernant purement le tissu pulpaire.

Bien entendu, il ne s'agit ici que d'une hypothèse. En tout cas, pour discuter leur pathogénie, il faut tout d'abord distinguer des lésions qui sont différentes, quoiqu'on les confonde souvent sous une même dénomination.

Résumé

La dentine opalescente est une anomalie caractérisée cliniquement par les altérations dentaires généralisées, connues sous plusieurs noms, microscopiquement par la dentine avec les canalicules dentinaires disposés par touffes.

La dentinogenesis imperfecta est une anomalie caractérisée cliniquement par les altérations dentaires généralisées, connues sous plusieurs noms, microscopiquement par la dentine avec stratification, irrégularités, inclusions. Elle est en relation plus ou moins visible avec des troubles des tissus mésodermiques.

BIBLIOGRAPHIE

1. Alley, T. R., Burket, L. W.—Hereditary Opalescent Dentin. *Oral Surg., Oral Med. & Oral Path.*, 6:328, 1953.
2. Becks, H.—Histologic Study of Tooth Structure in Osteogenesis Imperfecta. *Dent. Cosm.*, 73:437, 1931.
3. Bery, B. T., Schwab, M.—A Case of General Hereditary Defective Formation. *Brit. Dent. J.*, 78:294, 1945.
4. Brabant, H., Klees, L., Werelds, R. J.—Anomalies, mutilations et tumeurs des dents humaines. Paris, 1958.
5. Chaput, A.—Un cas de maladie de Capdepont. *L'Odontologie*, 1951, 6:291.
6. Chaput, A.—La maladie de Capdepont. *Arch. Fr. de Pédiat.*, T. X., No. 9, 1953.
7. Corbell et Bessière.—Trois cas de maladie de Capdepont dans la même famille. *L'Odontologie*, 1950, 11:583.
8. Dechaume, M.—Précis de Stomatologie. Paris, 1949.
9. Finn, S. B.—Hereditary Opalescent Dentin. *J.A.D.A.*, 25:1240, 1938.
10. Freeman, S., Skillen, W.—Brown Opalescent Dentin Associated with Retinitis Pigmentosa. *J. Dent. Res.*, 21:337, 1942.
11. Hector, G. A., Evans, D. G.—Dental Agenesis in the Presence of Diabetes Mellitus. *Dent. Cosm.*, 74:986, 1932.

12. Hodge, Flinn, Lose, Gachet, Bassett.—Hereditary Opalescent Dentin. J.A.D.A., 26:1663,1939.
13. Hodge, Flinn, Robinson, Manly, Manly, Van Huysen, Bale.—Hereditary Opalescent Dentin. J. Dent. Res., 19:521,1940.
14. Hoggins, G. S., Marsland, E. A.—Developmental Abnormalities of the Dentine and Pulp Associated with Calcinosis. Brit. Dent. J., 92:305,1952.
15. Hopewell-Smith, A.—A Case of Partial Dental Aplasia. Dent. Cosm., 63:465,1921.
16. Hursey, Witkop, Miklashek, Sackett.—Dentinogenesis Imperfecta in a Racial Isolate with Multiple Hereditary Defects. Oral Surg., Oral Med. & Oral Path., 9:641,1956.
17. Ivancie, G. P.—Dentinogenesis Imperfecta. Oral Surg., Oral Med. & Oral Path., 7:984,1954.
18. Kostlan, J., Hostomska, L.—Dentinogenesis Imperfecta. Cs. Stom., 1951,4-5,132.
19. Kostlan, J., Strakova, M.—Vyvoj zubu pri osteogenesis Imperfecta. Cs. Stom., 1951,10,407.
20. Mittelman, J. S.—Osteogenesis Imperfecta. (Odontogenesis Imperfecta.) Oral Surg., Oral Med. & Oral Path., 3:1562,1950.
21. Raison, Lepolvre, Roisin.—La maladie de Capdepont, Rev. de Stom., 53:185,1952.
22. Roberts, E., Schour, I.—Hereditary Opalescent Dentine (Dentinogenesis Imperfecta). Am. Jour. of Orthod. & Oral Surg., 25:267,1939.
23. Roberts, W. R.—Hereditary Dentinogenesis Imperfecta (Opalescent Dentine). Brit. Dent. J., 87:6,1949.
24. Roisin, M.—Un exemple de maladie héréditaire: la maladie de Capdepont. L'Odontologie, 74:161,1953.
25. Rushton, M. A.—The Structure of the Teeth in a Late Case of Osteogenesis Imperfecta. Jour. of Path. & Bacter., 48:591,1939.
26. Rushton, M. A.—A Case of Dentinal Dysplasia. Brit. Dent. J., 69:165,1940.
27. Rushton, M. A.—A New Form of Dentinal Dysplasia: Shell Teeth. Oral Surg., Oral Med. & Oral Path., 7:543,1954.
28. Schimmelpfennig, CH.B., McDonald, R. E.—Enamel and Dentine Aplasia. Oral Surg., Oral Med. & Oral Path., 6:1444,1953.
29. Schulze, d'après Brabant, Klees, Werelds.
30. Sclaire, R.—Hereditary Opalescent Dentin. Brit. Dent. J., 84:164,1948.
31. Shafer, W. G., Hine, M. K., Levy, B. M.—A Textbook of Oral Pathology. Philadelphia, 1958.
32. Skillen, W. G.—Histologic and Clinical Study of Hereditary Opalescent Dentin. J.A.D.A., 24:1426,1937.
33. Stones, H. H.—Oral and Dental Diseases. Edinburgh, 1951.
34. Thoma, K. H.—Oral Pathology. St. Louis, 1950.
35. Toto, P. D.—Osteogenesis Imperfecta Tarda with Dentinogenesis Imperfecta. Oral Surg., Oral Med. & Oral Path., 6:772,1953.
36. Wilson, G. W., Steinbrecher, M.—Hereditary Hypoplasia of the Dentin. J.A.D.A., 16:866,1929.
37. Winter, G. R., Malocco, P. D.—Osteogenesis Imperfecta and Odontogenesis Imperfecta. Oral Surg., Oral Med. & Oral Path., 2:782,1949.



Photographie prise au cours du Congrès de l'Association dentaire canadienne tenu à Montréal, du 26 au 29 octobre 1958. On voit ici le docteur et Madame Ernest Charron regardant une peinture à l'huile, qui devait être offerte au docteur Charron, quelques instants plus tard. Cette offrande représente l'hommage de toute la profession dentaire canadienne à celui qui fut durant de nombreuses années doyen de la Faculté de Chirurgie dentaire de l'Université de Montréal.

De nos Devoirs envers la langue française

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Il n'est pas de vie sans modification constante.

Une langue vivante est telle, non seulement parce qu'elle continue à être parlée, mais aussi parce que, contrairement à ce qui arrive avec les langues dites mortes, qui sont restées figées dans la forme qui était la leur au moment où disparurent les dernières populations qui en usaient, elle est constamment soumise à des modifications, témoins et preuves de sa vitalité. Et cette comparaison peut être poussée plus loin car, tout comme un véritable être vivant, une langue peut être bien ou mal portante, les modifications qu'elle subit peuvent lui être utiles, comme elles peuvent lui être nuisibles; elle peut être florissante et porter des fruits, elle peut se faner et dépérir; elle peut, en un mot, suivre une marche ascendante, ou, au contraire, être sur son déclin.

Que notre langue française soit bien vivante, nul ne saurait en douter. Mais pour ce qui est de savoir si elle est bien ou mal portante, si les modifications qu'elle est en train de subir lui sont favorables ou non, le moins qu'on puisse en dire, c'est que des symptômes extrêmement fâcheux se font jour. Contre ces symptômes, tous les Français ont le devoir de réagir. Et, effectivement, de nombreuses réactions ont déjà, vous ne l'ignorez certainement pas, été enregistrées. C'est ainsi que, pour ne citer que quelques exemples entre autres, au cours d'une très belle conférence qu'il prononça récemment au Cercle Richelieu, sous la présidence de M. André Siegfried, M. André Feugère lança ce cri d'alarme: "Deux cent cinquante ans après Montesquieu, le français à la dérive". Et que M. P. Agron, dans un article de la *Revue des Sciences pures et appliquées*, en formulant le voeu que soit créé un véritable "service d'immigration" pour le vocabulaire technique, écrivait fort spirituelle-

ment: "Il est regrettable d'être convoqué par un ministère français à une réunion de follow-up; d'entendre un ami dire qu'il achève son staffing-up; un autre qu'il se fait briefer; un autre encore qu'il fait un survey; il est regrettable de lire sous la plume d'un Président de Chambre au Tribunal de la Seine: "un mode d'éducation plein de dangers est celui des affections sur-protectrices, ou, comme on dit de plus en plus "overprotecting".

La France traverse actuellement une période critique de son histoire. Et les détracteurs sont nombreux pour soutenir qu'elle est sur la voie de la décadence. Acceptons-nous leur jugement? Sommes-nous, oui ou non, résignés à leur donner raison? Si nous ne le sommes pas, et si nous voulons le prouver, à nous-mêmes au moins, sinon à ceux qui ne veulent pas entendre, nous devons nous rappeler que la langue est le miroir de la vitalité d'un peuple; que c'est au temps de l'apogée de la puissance de l'Empire Romain que le latin a connu ses plus belles heures, que Cicéron était contemporain de César; que, lorsque vinrent les années de la décadence, la langue de Cicéron et de Virgile céda la place au bas-latin. Et si nous voulons prouver que la France est toujours la France, nous devons, chacun dans notre domaine et selon nos moyens, nous appliquer à faire en sorte que les historiens de l'avenir ne puissent penser que les Français de 1958 parlaient le "bas-français".

Certes, ce n'est pas notre rôle, à nous Chirugiens-Dentistes, de nous attaquer à tous ces abus de langage auxquels nous assistons constamment: mots tronqués pour aller plus vite, mots formés d'initiales et n'ayant aucune signification par eux-mêmes, mots dont le sens est à ce point déformé qu'ils signifient le contraire de ce qu'ils disaient à l'origine, etc., etc.

Les problèmes que je me propose de soulever devant vous restant, bien entendu, dans le domaine strict de notre spécialité, je n'entends pas davantage traiter de la terminologie générale de la Science Odontologique. C'est là un domaine auquel notre regretté Confrère Solas avait, au cours des dernières années de sa vie, consacré, avec une érudition et une compétence exceptionnelles, une activité considérable; un domaine, au demeurant, au sujet duquel notre Académie pourrait avoir son mot à dire, mais dans des Commissions internationales. Mon propos d'aujourd'hui se rapporte simplement, et ce n'est déjà pas si mal, à notre seul langage français, aux termes et expressions que nous employons dans nos écrits, dans notre enseignement, mais aussi dans notre conversation, sur tous sujets de notre spécialité.

Deux ordres de problèmes me paraissent devoir retenir notre attention. Car, avant de nous attaquer à la question des termes étrangers, qui se pose à l'heure actuelle avec une acuité de plus en plus grande, il y aurait lieu, me semble-t-il, d'expurger notre langage des fautes de français qu'il peut contenir. Voici, pour préciser ma pensée, quelques exemples.

Une expression qui, depuis longtemps, me chagrîne tout particulièrement est "le suçage du pouce". Je ne suis pas le premier à la relever, Henri Villain l'avait fait bien avant moi. Notre regretté Confrère avait proposé pour la remplacer, comme plus correcte, "sucement". Mais le mot, comme le dit le Larousse, est "non usuel". Pourquoi pas "suction"? Je me le suis toujours demandé.

Depuis que l'ARPA internationale a fait disparaître le pyorrhée, le mot tout au moins sinon la chose, pour la remplacer par parodontose, nous voyons apparaître dans les travaux de parodontologie l'adjectif "parodontaire". Pourquoi pas "parodontique", qui est davantage dans nos habitudes? Parodontaire est une réminiscence de "paradentaire" résultant de "paradentose", ce terme que l'ARPA a voulu, et elle avait probablement ses raisons pour le faire, supprimer; paro-

dontaire présente, en outre, l'inconvénient de perpétrer la fâcheuse confusion qui résultait de l'emploi simultané des deux expressions "paradentose" et "parodontose" qui avait abouti à une confusion telle, qu'encore maintenant, il nous arrive bien souvent de rencontrer—et ce n'est pas toujours par faute de frappe ou d'impression—une combinaison grotesque des deux, telle que "paradontose" et même "parodontose". Cela dit, je ne saurais trop féliciter l'importante organisation internationale qu'est l'ARPA, pour le travail si sérieux qu'elle a accompli dans le domaine de la terminologie et qui a abouti à une heureuse solution du problème si irritant que constituait cette hydre aux cinq cents noms qu'était la "pyorrhée", avant son intervention.

J'ai trouvé dernièrement, sous la plume d'un de nos confrères, et non des moindres, "contentionner". C'est un de ces affreux barbarismes dont nous sommes de plus en plus envahis, tels que réceptionner, visionner, etc. Contentionner a, paraît-il, été adopté par un auteur des plus éminents, qui fait autorité en matière de prothèse. Ce n'est pas une raison suffisante pour le conserver et je crois qu'il n'y a pas matière à discussion: c'est une erreur. Mais ce n'est pas tout. Car, remontant plus haut, je ne suis pas éloigné de penser que "contention", que nous avons adopté depuis longtemps et qui lui a donné naissance, ne soit également une erreur. A ce propos, et sans d'ailleurs chercher à approfondir la question, j'ai eu cependant la curiosité de voir ce qu'en disait le Larousse. Et j'ai eu la surprise de constater l'existence de l'adjectif "contentif", terme employé, semble-t-il, en chirurgie, avec un sens qui justifierait celui que nous donnons à contention. On dit, en effet, "un pansement contentif", qui signifie: "qui sert à retenir, à maintenir en place". Ce qui n'empêche que "contention" est expliqué tout à fait différemment par le même Larousse: "assujettissement auquel on se soumet, effort tenté pour faire quelque chose, grande application, débat, dispute..." Nous voici bien loin du sens que nous lui donnons. A mon

humble avis, contention vient de contenir, contenir donnerait contenu, mais il s'agit alors du contenu d'un récipient...

Voici encore un problème sur un plan différent. Dent "morte" est considéré par certains comme une expression inexacte du point de vue physiologique. Nous n'entrons pas dans ce débat, qui sortirait du cadre que je me suis tracé. Pour remplacer ce terme, on emploie dent dépulpée. Mais j'ai lu récemment, dent "épulpée". Ce dernier ne serait-il pas plus correct?

Mais arrêtons-là ces quelques exemples, pour ne pas abuser de votre patience, d'autant plus que l'influence étrangère devra nous retenir plus longtemps.

Cette influence se manifeste de différentes façons. Il y a, évidemment, l'introduction directe dans notre vocabulaire de termes anglais, tels quels. Et dans ce cas deux possibilités existent: car, en dehors des mots d'apparence entièrement anglaise, il y a ceux qui sont lisibles en français, qui prennent alors l'apparence trompeuse de mots français et ont en plus, quelquefois, l'inconvénient de créer une confusion avec des mots déjà existants, auxquels ils donnent un sens qui n'était pas le leur.

Mais il y a aussi la transformation, sous l'influence étrangère, de mots français, et notamment la formation défecueuse des adjectifs.

Voici, pour commencer, deux exemples qui me paraissent typiques, de véritables contorsions que nous appliquons à notre langue par esprit d'imitation.

Nos prothésistes ont pris l'habitude de dire "occlusion centrique." Certes, je n'ignore pas que "concentrique, excentrique" sont des formes bien françaises. Mais je n'ai jamais entendu "centrique" par personne d'autre que par nous, Chirugiens-Dentistes, et je suis sûr que si nos Confrères anglo-saxons ne disaient pas "centric-occlusion", nous n'aurions jamais cessé de dire "central", comme tout le monde. A l'opposé, les parodontologistes disent "périodontal", alors que dans tous nos écrits qui n'évoluent pas autour de l'ARPA, on trouve toujours "periodonti-

que". Et "Périodontal" est, de toute évidence, la transposition du "periodontal" américain.

Depuis que le fluor s'est emparé de nos préoccupations, nous avons entendu successivement: "fluoridation, fluorination, fluorisation". Nos Confrères suisses disent, plus simplement, fluoration. Je dois cependant ajouter que, pour ma part, je donnerais la préférence à fluoruration.

Voici une nouvelle méthode de traitement: la "relaxation". Un mot qui n'a de français que l'apparence. Et on ne s'est pas demandé si "détente", par exemple, ne pourrait pas dire la même chose.

Mais le plus grand morceau, le plat de résistance si je puis m'exprimer ainsi, est posé, vous n'en doutez pas, par le problème des mots anglais introduits tels quels dans notre langue. L'anglicisme sévit dans notre vocabulaire d'une façon si intense qu'il est devenu urgent d'y mettre bon ordre. Il ne s'agit pas, disons-le tout de suite, de faire preuve de je ne sais quel chauvinisme, qui serait absolument déplacé à notre époque où les contacts entre les peuples sont si constants, où l'inter-dépendance, pour employer une expression à la mode, est si puissante. Il s'agit tout simplement d'une réaction de défense de notre langue, exposée à subir des déformations d'autant plus dangereuses que nous nous trouvons en présence d'un phénomène qui, bien loin d'être passager, ira en s'aggravant. La langue française a connu jadis une époque où l'anglomanie était due à ce que nous appelons aujourd'hui, snobisme et qui n'est autre chose qu'une mode ou un engouement. Sous ce rapport d'ailleurs, nous serions mal venus de nous plaindre, car notre belle langue française a, de son côté, bénéficié de bien plus d'engouements de ce genre. Et, s'il fut un temps où, à Paris, il était "fashionable" d'angliciser, il est encore aujourd'hui "chic" de parler français dans bien des parties du monde. Dans le cadre même de notre profession, il n'y a pas bien longtemps encore, il n'était "grand" dentiste qu'américain, ce qui nous a valu, le

"bridge", car "pont", c'était trop simple et surtout vulgaire.

Aujourd'hui, la situation est différente. L'emploi des termes anglo-saxons résulte d'une nécessité. Nous subissons et, tout porte à croire que nous subirons pendant longtemps, l'influence des travaux, de plus en plus nombreux et de plus en plus importants, de nos Confrères d'outre-atlantique. De façon paradoxale, aujourd'hui, c'est de l'Occident que nous vient la lumière, et il n'est dentiste consciencieux qui ne se tienne au courant de ces travaux. Chaque jour, une conception nouvelle, une méthode nouvelle, un instrument nouveau, nous sont communiqués. Ils nous arrivent avec leur état-civil et, n'ayant pas le moyen de faire autrement, nous les adoptons tels quels. Mais si nous n'y prenons garde, nous arriverons un jour à parler une sorte de sabir invraisemblable, qui n'aura de français que le nom, et qui, de plus, ne sera pas davantage anglais. Car, si nous ne courons peut-être pas le risque d'employer des mots anglais à contre-sens, comme cela est arrivé plus d'une fois—voir "smoking", "lavatory", etc.—il y a la prononciation. En effet, ou bien nous prononçons à l'anglaise—si tant est qu'il soit possible à un Français de prononcer l'anglais correctement—auquel cas nous risquons d'être suspectés de vouloir étaler des connaissances linguistiques qu'au demeurant nous ne possédons peut-être même pas, ou bien nous prononçons à la française, ce qui me paraît quelque peu ridicule. Comment, en effet, empêcher un dentiste français qui ignore tout de la langue de Shakespeare de dire qu'il a fait un "slice"? Nous disons bien, il est vrai, déjà un Unit-équipement ou un slip-joint? A moins encore de tomber dans l'excès contraire et de dire "aie" là où un simple "i" suffit—car la langue française n'a pas le monopole des bizarreries et des contradictions—à l'exemple de cette élégante, qui au cours d'un diner mondain, parla de Taite-Laive à son voisin de table, qui mit quelque temps, et pour cause, avant de comprendre qu'il était question de l'historien romain.

Il me paraît presque superflu de citer des exemples. Mais je ne résiste pas à la tentation de déclarer, à mon tour, qu'il est regrettable d'entendre nos Confrères dire qu'ils font un "planning" de traitement; qu'ils posent à ce jeune patient un "space-maintainer", en vue d'un "twin-arch"; que pour sa maman, ils font un "slice-cut" en vue d'un "veneer" ou une "jacket-crown" et, pour le papa, des "pinledges" et des "pontics"; qu'avant de placer un "onlay", ils mettent des "clamps" et qu'ils polissent avec des "strips"; et que pour le grand-papa, il ne faut surtout pas oublier le "post-dam". Et ainsi de suite.

Pourquoi, dans notre langage, cette débâche de mots anglais? A mon avis, pour deux raisons. L'une est de facilité. Nous ne nous donnons pas la peine de faire mieux. L'autre, plus importante, c'est que personne n'a la charge et le souci de trouver le mot français adéquat, ni, surtout, l'autorité pour l'imposer, qui devrait cela va sans dire d'ailleurs, aller de pair avec la compétence en la matière.

Nous ne voyons jamais de mots anglais dans les publications allemandes que nous recevons. Je sais bien que la langue allemande bénéficie d'un avantage, qui est d'ailleurs aussi un inconvénient, de pouvoir former des mots composés. Mais je gage que dans les publications de langue russe, ou chinoise, ou japonaise, que sais-je? on trouve aussi bien le moyen de s'en passer. Si nous voulions nous en donner la peine, nous trouverions en français également, soit des termes correspondants, soit même des mots composés. Nous avons adopté depuis longtemps le mot inlay. Il bénéficie d'une prononciation facile pour nous. Mais tout le monde sait qu'un inlay est une incrustation. Or, voici son frère nouveau venu : onlay. Et je ne vois vraiment pas qu'est-ce qui s'opposerait à ce que nous disions, par analogie, une "surcrustation" par exemple. Si quelqu'un, je ne sais pas qui, n'avait trouvé "rebasage", nous en serions toujours à dire "relining"!

Tels sont, mes chers Confrères, les problèmes qui se posent à nous. Les ayant

brèvement esquissés, je voudrais, avant d'aller plus loin, vous exposer les raisons qui m'ont incité à vous les soumettre et justifier cette initiative, venant de moi, qui n'étais pas plus indiqué pour le faire que la plupart d'entre vous, peut-être même moins.

Dans l'exercice des fonctions que j'assume, comme certains d'entre vous le savent, de Président du Comité de Rédaction d'un périodique de notre profession à grande diffusion, nous nous sommes appliqués, mes collaborateurs et moi-même, à veiller à ce que la langue employée dans nos colonnes fût aussi correcte que possible. Nous avons pensé, en effet, que la presse avait un grand rôle à jouer dans ce domaine; que, si la presse quotidienne se rend souvent coupable de ce que nous pourrions qualifier de véritables crimes contre la langue, la presse scientifique, elle, se devait plutôt de réparer le mal fait par ailleurs; car ce qui est excusable jusqu'à un certain point pour les journalistes de la grande presse qui sont poussés par le temps, ne l'est pas pour nous. Nous avons donc pensé qu'il appartenait à la Rédaction de parfaire et, si possible, d'améliorer—en les soumettant, bien entendu, à l'approbation de leurs auteurs avant toute publication—des écrits rédigés toujours hâtivement. Car il est bien vrai que si l'art est difficile la critique est aisée. En nous livrant à ce travail, des difficultés ne tardèrent pas à surgir sous nos pas, ou plutôt sous nos plumes. Et ces difficultés nous ont conduit à cette conclusion que si personne ne doit se permettre de créer, en s'inspirant de sa seule fantaisie, un mot nouveau; que si personne n'a le droit de décider que telle forme est mauvaise et, à plus forte raison, de la corriger de sa propre autorité, un journaliste doit être, dans ce domaine, plus prudent et plus circonspect que quiconque.

Ces vérités qui paraissent évidentes demandent cependant quelques commentaires. Que personne n'ait le droit de créer un mot nouveau, c'est indiscutable. Car rien n'est dangereux en cette matière, comme l'initiative privée. C'est elle qui

fait que le langage scientifique est encombré de termes mal faits, dont certains disent même souvent le contraire de ce qu'ils sont censés exprimer. Et je ne puis résister à la tentation de vous citer l'exemple d'un de ces mots, qui est aujourd'hui sur toutes les lèvres et dont, si extraordinaire que cela paraisse, je crois bien être le seul à avoir signalé à quel point il est mal fait. C'est le mot "antibiotique". Ce mot, de création récente, dû probablement à l'initiative d'un de ces savants éminents qui ont rendu de si extraordinaires services à l'humanité par leurs découvertes, me paraît un prototype. Car, signifiant littéralement "contre la vie", ce qui s'entendait à l'origine, bien entendu, contre la vie des micro-organismes, voulez-vous me dire, lorsque vous appliquez un traitement antibiotique, contre la vie de qui il est appelé à agir? Si nous nous en tenons strictement à l'expression elle-même, rien ne vient nous empêcher de penser que cela pourrait tout aussi bien être contre la vie du malade!

Que personne n'ait le droit de s'ériger en censeur, c'est évident, d'abord parce qu'il faudrait être sûr qu'il y a erreur, ensuite parce que rien ne prouve que le censeur prétendu n'en substituerait pas une autre à celle qu'il se propose de redresser.

Pour ce qui est du journaliste, il doit s'abstenir plus que n'importe qui, et ne doit pas oublier que, sujet à erreur comme tout le monde, il a entre les mains un instrument extrêmement efficace pour donner une large diffusion à l'erreur qu'il aurait pu commettre.

Dans un admirable petit livre que, soit dit en passant, tout le monde devrait avoir lu, et dans lequel il traite d'un sujet extrêmement douloureux "La Pathologie de la Misère" M. le Prof. Charles Richet, s'est insurgé contre cette erreur qui fait qu'alors que le mot sphère est du genre féminin, hémisphère est du masculin. "J'aime mieux commettre une faute de français, écrit-il, plutôt qu'une stupidité". Et, tout au long de ses pages, il écrit, chaque fois que l'occasion s'en présente "une hémisphère". Si l'éminent

académicien a pu se permettre une telle initiative, tout le monde n'est pas le Prof. Charles Richet. Encore faut-il dire que cette rectification ne figurait que dans un ouvrage dont il était lui-même l'auteur, alors que le journaliste agit souvent sur des écrits qui ne sont pas les siens.

Ne voulant pas se permettre de telles libertés, le périodique à la Rédaction duquel j'appartiens avait cru un moment pouvoir résoudre certaines difficultés en les soumettant à l'appréciation de ses lecteurs. A l'enquête à laquelle nous avons tenté de nous livrer, les réponses furent nombreuses. Trop nombreuses même, et le problème s'en trouva seulement déplacé : car, entre les différentes solutions qui nous étaient offertes, qui avait le droit de faire un choix?

C'est toujours à cette question que nous aboutissons. Qui a le droit de faire un choix? Qui a le droit de trancher les difficultés? Qui peut se permettre de créer, si le besoin s'en fait sentir, un mot nouveau?

Le but que je poursuivais en présentant devant l'Académie Nationale de Chirurgie Dentaire ce Rapport, apparaît ainsi de lui-même. Cette autorité qui nous manquait jusqu'ici, elle existe, elle est ici-même. C'est à l'Académie Nationale de Chirurgie Dentaire qu'incombe le devoir de mettre de l'ordre dans notre langage. Pour y parvenir, elle se doit de créer, en son sein et sous son autorité, un Comité Technique du Vocabulaire Dentaire.

En prenant cette initiative, elle ne ferait d'ailleurs que suivre des exemples déjà nombreux. En voici quelques-uns. Un Office du Vocabulaire français a été créé, sous la présidence de M. Georges Duhamel, qui se propose de "lutter contre l'altération du vocabulaire et de se saisir, entre autres tâches, de la terminologie médicale. Un Comité Consultatif du langage scientifique, présidé par MM. de Broglie et Georges Duhamel, s'est donné pour mission d'étudier "tous les problèmes touchant le langage des sciences".

Et un autre Comité dit "d'Etude des Termes Techniques français" s'occupera

de tout ce qui concerne les sciences de l'ingénieur.

La tâche de notre Comité technique, limitée à tout ce qui concerne la Science odontologique, pour être plus modeste, n'en sera pas moins lourde. Il ne s'agit pas bien entendu, pour notre jeune Académie, de vouloir singer sa glorieuse devancière du quai Voltaire, en s'attelant à la rédaction d'un Dictionnaire qui, de A à Z, mettrait des siècles avant d'être achevé. Dans notre tâche, qui présente un intérêt pratique immédiat, il ne s'agit pas davantage, dans mon esprit, de créer je ne sais quel Directoire, ayant la prétention d'imposer des solutions de son choix. A mon avis, le Comité devrait : communiquer à l'ensemble de la profession, par la voie de la presse et au fur et à mesure, les termes qu'il se propose d'examiner en vue de leur remplacement ou de leur modification et solliciter les suggestions de tous; solliciter directement la collaboration de toutes personnes compétentes et notamment : des spécialistes, pour des termes relevant de leur spécialité; de personnalités compétentes dans le domaine linguistique, sans oublier, bien entendu, les Confrères des pays de langue française. Un premier tri étant fait parmi les suggestions et informations recueillies, il devrait également communiquer à la profession ses résultats et n'adopter une solution définitive qu'après avoir pris connaissance des réactions qu'elle aura provoquée. Car l'oeuvre du Comité ne sera utile que s'il s'applique à faire en sorte que son autorité soit reconnue de tous. Et elle ne le sera que si la preuve est donnée du sérieux de ses travaux, et si la profession a acquis la conviction qu'il n'est inspiré par aucun esprit dictatorial et n'entend lui imposer que ce qu'elle aura choisi elle-même.

Mon Comité de Rédaction, qui s'honore d'être à l'origine de ce mouvement, dont il est persuadé que, sous la vigilante impulsion qui lui sera donnée par l'Académie, il sera des plus fructueux, se fait un devoir de mettre toute son activité au service du futur Comité. Car s'étant in-

terdit de prendre des initiatives susceptibles de porter préjudice à notre langue, il se fera un devoir de contribuer à son amélioration. Et l'expérience montre qu'aucun instrument n'est aussi efficace pour imposer les expressions correctes et bannir définitivement celles qui ne le sont pas, qu'une presse à grande diffusion et à fréquence rapide.

L'Académie Nationale de Chirurgie Dentaire, en acceptant ma proposition, donnera à tous une preuve nouvelle de son utilité. En s'attelant à la tâche de mettre de l'Ordre dans notre vocabulaire, elle rendra un éminent service, non seulement à la profession française, mais à la

profession en général, car un pas en avant aura alors été fait vers la solution de plus d'un des problèmes de la terminologie internationale. Et notre belle langue française, dont la réputation de clarté n'est plus à faire, aura repris, une fois encore, ce rôle qui était le sien depuis des temps immémoriaux et que Descartes a si magnifiquement illustré. Et nous aurons peut-être contribué, pour notre modeste part, à démontrer qu'en 1958 nous parlions, non un quelconque "bas-français", mais une langue qui ne la céderait en rien à celle de Racine et de Voltaire.

L'Information Dentaire

22-5-58

Vient de Paraître

Dr H. Brabant, L. Klees et R. J. Werelds "Anomalies, mutilations et tumeurs des dents humaines".
Ed. Julien Prêlat, Paris, Liège, 1958. 458 pages, 328 fig.

Quelques chapitres choisis de pathologie dentaire font le sujet de cet ouvrage excellent.

Les auteurs traitent très systématiquement des anomalies fréquentes et décrivent aussi des cas rares en expliquant toujours soigneusement l'étiologie et la pathogénie. Ils se basent sur leur expérience respectable et sur une bibliographie très complète qui ne se borne pas à une ou deux langues, mais qui contient les travaux les plus récents (sans donner les titres des articles).

La première partie est agencée suivant une classification détaillée basée sur les caractères les plus primitifs, volume, forme, nombre. En conséquence, souvent la même anomalie réapparaît dans plusieurs chapitres: d'autre part, un seul chapitre contient des phénomènes pathologiques essentiellement différents, tels que: anomalie du développement, inflammation, traumatisme. La conception des tumeurs est tellement large qu'elle groupe les perles d'émail avec les sarcomes et les kystes. Même le praticien peu averti, auquel cette classification est adressée (p. 15), devrait pouvoir reconnaître: inflammation, anomalie du développement, néoplasme.

Il faut admirer que les auteurs discutent dans tous les cas des théories nombreuses toujours avec le même esprit critique très objectif autant envers celles qu'ils rejettent qu'envers les faiblesses de celles qu'ils acceptent. On trouve dans cette monographie aussi une présentation critique de quelques spécialités françaises comme la "vulnérabilité dentaire", la "nécrose des quatre incisives supérieures" et la "mélano-dontie infantile".

On peut recommander cet ouvrage à tous les dentistes de langue française. Le praticien général y trouvera une explication de cas rares et intéressants qu'il peut rencontrer. Celui qui veut commencer une étude scientifique y trouvera une base solide et une revue critique des connaissances et théories actuelles dans le domaine limité par le titre.

Mézi

Nouvelles du Corps Dentaire Royal Canadien

Le 31 octobre avait lieu un dîner au mess des officiers des FAR du C., à Ottawa, en l'honneur du brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., Q.H.D.S., D.D.S., F.I.C.D., F.A.C.D., à l'occasion de sa retraite à titre de directeur général des Services dentaires.

Outre de nombreux officiers du Corps dentaire et leurs épouses, on remarquait parmi les distingués invités:

le vice-amiral H. G. DeWolfe, C.B.E., D.S.O., D.S.C., C.D., chef de l'état-major de la Marine, et Mme DeWolfe;

le lieutenant-général H. D. Graham, C.B.E., D.S.O., E.D., C.D., autrefois chef de l'état-major général, et Mme Graham;

le maréchal de l'Air Hugh Campbell, C.B.E., C.D., chef de l'état-major de l'air, et Mme Campbell;

le brigadier W.A.B. Anderson, O.B.E., C.D., vice-adjutant général, et Mme Anderson;

le brigadier K. A. Hunter, O.B.E., C.D., directeur général des Services de santé interarmes, et Mme Hunter;

le commodore-chirurgien T. B. McLean, C.D., directeur général des Services de santé de la Marine, et Mme McLean;

le brigadier P. Tremblay, O.B.E., C.D., directeur général des services de santé, et Mme Tremblay;

le commodore de l'Air A.A.G. Corbett, E.D., C.D., directeur général des Services de santé des Forces aériennes, et Mme Corbett.

Le brigadier K. M. Baird a présenté l'orateur principal de la soirée, le lieutenant-général Howard D. Graham. Ce dernier a retracé la longue carrière militaire du brigadier Wansbrough, qui a pris part à la première Grande Guerre, à titre de mitrailleur dans le Corps canadien des mitrailleurs, et qui est devenu par la suite directeur général des Services dentaires.

Au nom des officiers et soldats des forces régulières du Corps dentaire, le colonel G. B. Shillington a offert au brigadier et à Mme Wansbrough un portrait du brigadier, peint par Mme Pamela Edwards, de Sainte-Adèle (Qué.), tandis que le colonel H. R. McLaren a présenté, de la part de la Milice du Corps dentaire un bouquet de roses rouges à Mme Wansbrough ainsi qu'un projecteur et un écran au brigadier.

Le brigadier a remercié en termes éloquents tous ceux qui lui ont offert des cadeaux et qui ont fait son éloge, puis il a rendu hommage à sa charmante épouse. Il a exprimé le désir que tous les membres du Corps dentaire accordent à son successeur, le brigadier K. M. Baird, le même appui dévoué dont il a joui alors qu'il était directeur général des Services dentaires.

Pendant la soirée, on a donné lecture de nombreux télégrammes renfermant les bons souhaits de particuliers ainsi que des unités du Corps dentaire à l'adresse du brigadier et de Mme Wansbrough. Ces messages exprimaient les sentiments de toutes les personnes présentes et, à vrai dire, de tous les membres du Corps dentaire, qui leur offrent des vœux de santé et de bonheur.

Congrès en Belgique

L'Association des Licenciés et Dentistes Universitaires de Belgique a le plaisir de vous annoncer qu'elle fêtera l'an prochain le 25^e Anniversaire de sa fondation. En effet en 1929 il y aura 25 ans que les premiers diplômés de la licence en science dentaire, instaurée en 1929, sont sortis des Universités Belges.

A cette occasion le conseil d'administration a décidé d'organiser un Congrès de Science Dentaire qui aura lieu à Knokke-sur-Mer du 6 au 10 mai 1959. Il compte sur la présence de tous les licenciés belges, de tous leurs confrères d'autres disciplines, dentistes et stomatologistes, ainsi que sur de nombreux confrères étrangers.

Tous renseignements concernant le Congrès peuvent être obtenus auprès du Secrétaire général de l'Association: Albert GG Vermeersch, L.S.D., 8, Place Foch, Louvain. Belgique.

Martha Krasse. — Appareillage prothétique pour jeunes enfants.

Les enfants édentés, par suite de carie ou de traumatisme, peuvent bénéficier, tout comme les adultes, des possibilités de la prothèse. Trente enfants, entre 3 et 5 ans, ont été appareillés à l'Ecole Dentaire de Malmö (Suède), par appareils fixes ou amovibles. Les premiers comportaient des bridges télescopiques selon la technique de Willet, pour permettre le développement latéral du maxillaire. Il n'a pas été constaté de retards dans l'évolution des dents permanentes. Seule l'éruption des incisives dut être facilitée dans quelques cas, par une petite incision, ces dents ayant eu à traverser des tissus conjonctifs épaissis. Lorsque la radio indiquait qu'une dent était sur le point d'apparaître sur l'arcade, la partie correspondante de la prothèse était sectionnée. Des appareils amovibles, et même des prothèses complètes, ont été exécutés sur 15 enfants.

Prosthetic rehabilitation in preschool children (*Odont. Revy*, Suède, N° 1/58, pp. 37-56).

Prothèse

F.-A. Wallace. — Coiffes en résine.

L'utilisation de ces coiffes pour le remplacement d'une ou de plusieurs dents est devenue courante; mais les coiffes en résine autopolymérisante offrent deux avantages sur les autres coiffes de résine:

- facilité de fabrication;
 - exactitude de l'occlusion.
- L'auteur décrit une technique de réalisation personnelle intéressante.
- Coulée de résine sur les moignons naturels ou métalliques des dents piliers à l'aide de bagues de cuivre;
 - sculpture des dents à partir de ces modèles grossiers, en ménageant un trou sur la surface occlusale:
 - ajustage en bouche des diverses coiffes; s'arranger pour que seules les dents naturelles soient en contact;
 - replacer de la résine autopolymérisante du côté lingual après avoir obturé le trou occlusal avec de la cire;
 - lubrification des dents antagonistes et serrage des dents pendant la durée du durcissement de la résine. Cette empreinte est un guide très sûr pour faire l'ajustage et la sculpture au laboratoire. On la prend au plâtre de Paris ou avec un mélange de plâtre et d'alginate. L'empreinte antagoniste est prise aux alginate;
 - finissage des coiffes au laboratoire;
 - pose des coiffes "en bouche" et scellement, en bonne position grâce au petit évent ménagé sur la face occlusale.

Resin transfer copings (*Jour. Prost. Dent.* N° 2/3/58, pp. 289-292, 3 fig.).

D.-F. Taylor, W.-A. Leibfritz et Alfred-G. Adler. — Propriétés physiques des alliages dentaires au chrome-cobalt.

Cette étude scientifique de métallotechnie sur les alliages modernes utilisés aux points de vue: charge de rupture; élasticité; charge utile; elongation; dureté en surface; fusion, s'applique à 6 alliages courants.

Les moyennes obtenues sont pour:

- la charge de rupture: 84.500 à 108.500 psi.
- le module d'élasticité: 26 ou 29,5 ? 10⁶ psi (2 fois plus que l'or);
- la charge utile: 49.500 à 64.500;
- l'élongation: 1,9 à 6 %;
- la dureté Rockwell 30 N: 47 à 60;
- la température de fusion: de 2.355° à 2.650° (Fahrenheit) soit 1.350° à 1.400°.

A noter que les alliages désignés sous le nom de stellites contiennent outre le chrome, le cobalt et le molybdène, du nickel, de l'acier, du tungstène, du manganèse, du cuivre, du beryllium, du silicium, en pourcentages très faibles mais très divers.

Physical properties of chromium-cobalt dental alloys. (*Jour. Amer. Dent. Assoc.* N° 3/3/58, pp. 343-357, 5 fig.).

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